PROCEEDINGS

OF THE

CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XX, No. 12, pp. 473-482
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DECEMBER 31, 1940

XII

Report of the President of the Academy For the Year 1931

BY

C. E. GRUNSKY

President of the Academy

XIII

Report of the Director of the Museum and of the Aquarium for the Year 1931

BY

BARTON WARREN EVERMANN

Director of the Museum and of the Aquarium

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Report of the President of the Academy and Acting Director of the Museum and The Aquarium for the Year 1932 With Departmental Reports for the Two Years 1931 and 1932

BY

C. E. GRUNSKY

President and Acting Director of the Museum and Aquarium

SAN FRANCISCO

PUBLISHED BY THE ACADEMY

1940

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XII

REPORT OF THE PRESIDENT OF THE ACADEMY FOR THE YEAR 1931*

BY

C. E. GRUNSKY

President of the Academy

Owing to the financial stringency of the last few years the publication funds of the California Academy of Sciences have been seriously limited. In view of this deplorable condition it was deemed advisable to restrict the publications issued to scientific papers only, leaving Annual Reports and the usual statistical matter to more favorable times. The lacking ones will be issued as rapidly as possible.—EDITOR.

It is with particular satisfaction and pleasure that I present this annual report—this being the end of a 20 year period during which I have been honored with the presidency of the Academy. It has been a pleasure to be permitted during these years to assist in planning the Academy's research and other activities and to find its usefulness constantly extending. The latest evidence of progress we note is the fact that this annual meeting is the first general meeting of the Academy in our newly completed main unit of an East Wing.

Why, it may be asked, was this building erected at this time when everybody is economizing? The explanation is simple, but should perhaps be prefaced with the remark that, contrary to the general practice, public institutions and governments should spend more and not less in periods of business depression so as to stimulate the flow of money; so as to make for more not for less employment; so as to increase not decrease consumption, thereby giving the retailer and the property owner better opportunity to secure incomes and

* Printed from the John W. Hendrie Publication Endowment.

to pay taxes than under the reverse policy. It was in part the desire to thus accelerate the flow of money which prompted favorable action on a building program, but the main reason after all was the fact that the research activities of the Academy were in sore need of more room and that, as a contribution toward this building which is to house a goodly part of the African material which Mr. Leslie Simson is collecting, Mr. Simson placed in escrow for the Academy, properties worth about $150,000 subject to the sole condition that the Academy accept his offer to collect specimens of wild life in Africa, and that income from his property donation should go to him during his lifetime.

As the Academy has heretofore been putting aside on capital account from $10,000 to $15,000 a year the Board of Trustees, in the circumstances, deemed it wise to make a loan of $255,000. It is with this borrowed money that this building has been erected. In view of the large capital donation by Mr. Simson, and the specimens of African wild life which he is supplying at his own cost, and in view of the adequate accommodations thus made available for the Academy's administrative staff and the splendid facilities provided on the second floor for the Departments of Entomology and of Exhibits, the facilities for the Department of Fishes in the basement, and the magnificent storage spaces in various parts of the building it was then determined that the amount placed in recent years in capital account should now, for a time at least, be disbursed in operating expenses.

However, the installation of the African material in the alcoves provided for the same remains to be made. For the very large waterhole group at the end of the Simson Hall there should be about $15,000 donated by some friend of the Academy. For the ten large alcoves about $4000 each will be needed, and for the thirteen smaller alcoves about $1000 each.

It is a pleasure to announce in this connection that the Chief of Exhibits, Mr. Frank Tose, has offered to paint the background of one group as a donation; Dr. Barton W. Evermann proposes to contribute one group, and your President will attempt the painting of one background as a donation, with consequent cost reduction of the group, if his work should prove acceptable.

As will appear from the reports of the various members of the Academy's scientific staff the interest of the public in the exhibits at the Museum and in the Aquarium has continued unabated. The same need for more tank and floor space at the Aquarium as pointed out a year ago still exists. However, it seems hopeless to expect the needed funds from the city during the present business depression. Despite space limitation, however, the Aquarium maintains its reputation as one of the foremost in the world in the matter of the variety of the exhibits and in excellence of their display.

The various departments have made satisfactory progress, as will appear from the reports of the Director of the Museum and of the

several curators, despite the fact that because of the increase of expenses resulting from the addition of a new building, the retrenchment in department expenditures has already made itself felt.

Mr. McAllister has again contributed the sum of $100 to the Committee on the Conservation of Wild Life. For some years past he has made a like contribution.

For the special lecture courses, of which two with four lectures each were held during the year in the Auditorium of the Pacific Gas and Electric Company, 245 Market Street, the un-named friend of the Academy donated $250 on February 10th and $500 on August 24th.

Legal services were contributed by Mr. Edward Hohfeld, as well as by Mr. Francis Hutchens of the staff of Morrison, Hohfeld, Foerster, Shuman, and Clark. These services have been of particular value in connection with the planning and construction of the Academy's East Wing of its Museum Buildings.

The contract for the erection of this East Wing was awarded to Cahill Brothers on March 11th, 1931 and the building was accepted on December 10th, 1931. The cost of the building is indicated by the following payments:—

Cahill Brothers, prior to Dec. 31, 1931	$169,733.04
Architect's Commission	15,739.17
Agent's Salary	3,496.15
Insurance	461.22
Miscellaneous expenses	875.52
Total in 1931	$190,305.10
Cahill Bros. final payment in Jan. 1932	59,396.74
Total Cost of Building	$249,701.84

Among other improvements made during the year there are to be noted a new sewer for the Museum Buildings and the Aquarium; and a new filter for the Aquarium.

The transfer of the Administrative offices, of the Departments of Entomology, of Fishes, and of the Department of Exhibits in part into the East Wing allowed more space in the West Wing for the Departments of Botany, Paleontology, Ornithology and Mammalogy, and also for the Library.

Since October 24th the heat for the West Wing is being supplied from the new heating system in the East Wing.

Dr. David Starr Jordan, President Emeritus and Chancellor Emeritus of Leland Stanford, Jr. University, deceased September 19th, 1931, became a member of the Academy on October 5th, 1891, soon after his arrival in California. He was elected an honorary life member on January 3rd, 1898. He served the Academy as President for three periods, namely:—from January 6th, 1896 to January 3rd, 1898; from January 2nd, 1900, to January 5th, 1903; and from

January 4th, 1909, to January 3rd, 1912. Between these periods the Academy had as Presidents Dr. Wm. E. Ritter, Wm. Alvord, and E. J. Molera.

The Academy will ever revere Dr. Jordan's memory, even as those of us who knew him have appreciated his giving of his time and his ability to the work on which the Academy is engaged.

Mr. Joseph W. Hobson, deceased November 23rd, 1931, was first elected a member of the Academy on February 15th, 1869. He was called into service for the institution as its Recording Secretary on January 6th, 1902, and served in that capacity until February 19th, 1930, when failing eyesight forced his retirement. He, too, endeared himself to those who worked with him. He served the Academy long and well.

Because the Academy is still without an adequate auditorium, its stated meetings are being held in the Auditorium of the Public Library at the Civic Center, and the special lecture course was given in the Auditorium of the Pacific Gas and Electric Company on Market Street. The use of these audience halls has been granted to the Academy without charge, a courtesy which in both cases is sincerely appreciated.

Concerning the membership the following facts are of interest. The membership is made up of:—

Patrons	20
Honorary Members	14
Life Members	92
Fellows	61
Members	954
Junior Members	12
Total	1153

Of these:—

5 Life Members are also Fellows	5
5 Patrons are also Life Members	5
1 Fellow is also an Honorary Member	1
3 Fellows are also Patrons	3
Total	14
Actual Membership on Jan. 1, 1932, of	1139

On Jan. 1, 1931, the number of members stood at	1108
New Members were added during the year	90
Members lost by death	31
Members resigned	25
Members dropped (non-payment of dues)	3
	59
Gain in membership during year	31
Leaving the membership on Jan. 1, 1932, at	1139

The Academy carries on its list of Benefactors the following names:

Deceased

Mr. James Lick
Mr. Ignatz Steinhart

The Academy carries on its list of Patrons the following names:

Living

Mr. George C. Beckley
Dr. Frank E. Blaisdell
Mr. William B. Bourn
Mr. Templeton Crocker
Hon. William H. Crocker
Mr. Peter F. Dunne
Miss Alice Eastwood
Dr. Barton Warren Evermann
Mr. Herbert Fleishhacker
Hon. Joseph D. Grant
Mr. Edward Hohfeld
Mrs. Albert Koebele
Mr. A. Kingsley Macomber
Mr. John W. Mailliard
Mr. Joseph Mailliard
Mr. M. Hall McAllister
Mr. G. Frean Morcom
Mr. William C. Van Antwerp
Mr. Edward P. Van Duzee
Dr. E. C. Van Dyke

Deceased

Mr. William Alvord
Mr. Charles Crocker
Mr. W. M. Giffard
Mr. John W. Hendrie
Mr. William F. Herrin
Mr. Henry M. Holbrook
Mrs. Charlotte Hosmer
Mr. Ogden Mills
Mr. Alexander F. Morrison
Mr. Amariah Pierce
Hon. Leland Stanford
Dr. John Van Denburgh

Academy members who were called by death in 1931 are as follows:

Mr. Edward A. Beals	Member	December 29, 1931
Mr. William Burd	Member	May 16, 1931
Dr. Ng Poon Chew	Member	March 13, 1931
Prof. John Henry Comstock	Honorary Member	March 20, 1931
Dr. Paolo De Vecchi	Life Member	May 30, 1931
Mr. George S. Garritt	Member	August 20, 1931
Dr. William C. Hassler	Member	August 1, 1931
Mr. Joseph W. Hobson	Life Member	November 23, 1931
Dr. David Starr Jordan	Honorary and Life Member	September 19, 1931
Dr. William E. Keith	Life Member	January 16, 1931
Mr. Giles H. Lambson	Member	June 1, 1931
Mr. J. Eugene Law	Member	November 14, 1931
Mr. Robert Newton Lynch	Member	June 4, 1931
Dr. Marsden Manson	Member	February 21, 1931
Mr. Elliott McAllister	Member	August 3, 1931
Mr. Donald McKee	Member	March 14, 1931
Mr. Frank Malloye	Member	June 9, 1931
Dr. Albert Abraham Michelson	Honorary Member	May 9, 1931

Dr. William H. Nicols	Member	February 21, 1931
Dr. L. H. Pammell	Member	March 23, 1931
Mr. James E. Power	Member	April 6, 1931
Mr. V. J. A. Rey	Life Member	April 22, 1931
Dr. H. J. Ring	Member	1931
Mr. Max L. Rosenberg	Member	May 18, 1931
Mr. Arthur T. Shay	Member	May 9, 1931
Dr. James Perrin Smith	Fellow and Life Member	January 1, 1931
Mr. George W. Stewart	Member	September 6, 1931
Mr. James P. Taylor	Member	October 23, 1931
Dr. Harry L. Tevis	Member	July 19, 1931
Mr. E. A. Walcott	Member	January 1, 1931
Mr. George B. Willcutt	Member	September 17, 1931

In the year 1931 eleven free lectures were delivered at the stated meetings of the Academy, as follows:

JANUARY 7. "The Causes of the San Francisco Bay Fogs." Illustrated. By Maj. E. H. Bowie, District Forecaster, Weather Bureau, San Francisco.

MARCH 4. "Remarks on the Natural Resources and Geology of Southern Alberta." By Dr. Leo G. Hertlein, Assistant Curator, Department of Paleontology, California Academy of Sciences.

APRIL 1. "The Growth of the Earth as an Abode of Land Life." Illustrated. By Dr. Bailey Willis, Professor Emeritus of Geology, Stanford University.

MAY 6. "Relation of Fossils to the Oil Industry." By Mr. C. C. Church, Associated Oil Company, San Francisco.

JUNE 3. "Zones of Plant Life in Arizona." By Miss Alice Eastwood, Curator, Department of Botany, California Academy of Sciences.

JULY 1. "Collecting in Chiriqui." Illustrated. By Mrs. M. E. McLellan Davidson, Assistant Curator, Department of Ornithology and Mammalogy, California Academy of Sciences.

AUGUST 5. "The Managua Earthquake and the Nicaragua Canal." By Mr. C. B. Lastreto, San Francisco.

SEPTEMBER 2. "Rambles in Central America—Stories of Personal Experiences from Seventeen Years of Travel far from the Beaten Trail." Illustrated. By Mr. John M. Nicol, Consulting Engineer, San Francisco.

OCTOBER 7. "The Grasses in Nature and in Human Life." Illustrated. By Mr. Morris Halperin, Research Assistant in Agronomy, University of California.

NOVEMBER 4. "The History and Migration of the Monterey Pine Forest." Illustrated. By Mr. H. L. Mason, Associate in Botany, University of California.

DECEMBER 2. "Impressions Resulting from a Trip Through Africa." Illustrated with motion pictures. By Dr. Kaspar Pischel, San Francisco.

Sunday afternoon lectures were given in the auditorium in the Museum Building in Golden Gate Park as follows:

JANUARY 4. "Fort Ross." Illustrated. By Dr. E. O. Essig, Professor of Entomology, University of California, Berkeley.

JANUARY 11. "Alaska and the Reindeer Industry." Illustrated. By Mr. Carl Lomen, President of the Reindeer Corporation.

JANUARY 18. "Experiences with the Trumpeter Swan." Illustrated. By Mr. Joseph Dixon, Economic Mammalogist, Berkeley.

JANUARY 25. "Disease in California Forest Trees." Illustrated. By Dr. E. P. Meinecke, U. S. Bureau of Plant Industry.

FEBRUARY 1. "Peculiar Intrusive Forms of Sedimentary Rocks." Illustrated. By Dr. Olaf P. Jenkins, Chief Geologist, California State Division of Mines, San Francisco.

Sunday afternoon lectures were delivered in the Assembly Hall of the Public Library, Civic Center as follows:

FEBRUARY 8. "Alaska Salmon Canning Industry." Illustrated. By Mr. Perry Bruce Clark, Assistant Chemist, United States Food, Drug and Insecticide Administration, San Francisco.

FEBRUARY 15. "A Museum Preparator's Experiences in Africa." Illustrated. By Mr. Frank Tose, Chief of Exhibits, California Academy of Sciences.

FEBRUARY 22. "Grasses and Man." Illustrated. By Mr. Morris Halperin, Research Assistant in Agronomy, University Farm, Davis.

MARCH 1. "Earthquakes and the Interior of the Earth." Illustrated. By Dr. Perry Byerly, Assistant Professor of Seismology, University of California, Berkeley.

MARCH 8. "The Mourning Dove in California." Illustrated. By Mr. Leo K. Wilson, Acting Director, Bureau of Education and Research, Division of Fish and Game, San Francisco.

MARCH 15. "My Trip to Iceland." Illustrated. By Dr. George Haley, Professor of Biology, University of San Francisco, San Francisco.

MARCH 22. "Mount Shasta." Illustrated. By Mr. Pierre J. Denand, Associated Oil Company, San Francisco.

MARCH 29. "Geology of Coakuila, Mexico." Illustrated. By Dr. Leo G. Hertlein, Assistant Curator, Department of Paleontology, California Academy of Sciences.

APRIL 5. "Tramping and Climbing in the High Sierra." Illustrated. By Mr. Francis P. Farquhar, San Francisco.

APRIL 12. "The Pioneer Movement Toward the Pacific Coast." By Mr. Harold Stein, Field Executive, Boy Scouts of America, San Francisco.

APRIL 19. "What About the Philippines?" Illustrated. By Mr. Alvin Seale, Superintendent, Steinhart Aquarium of the California Academy of Sciences.

APRIL 26. "Experiences with the Desert Big Horn Sheep." Illustrated with motion pictures. By Mr. Donald McLean, Field Naturalist, California Fish and Game Commission, San Francisco.

MAY 3. "The Paleontological History of the Coast Range Forest." By Mr. H. L. Mason, Associate in Botany, University of California, Berkeley.

MAY 10. "Modern Methods in Museum Exhibition." Illustrated. By Mr. Frank Tose, Chief of Exhibits, California Academy of Sciences.

MAY 17. "The Study of Pools." Illustrated. By Mr. H. Walton Clark, Assistant Curator, Department of Fishes, California Academy of Sciences.

MAY 24. "Insects in Relation to Public Health." Illustrated. By Prof. W. B. Herms, Entomologist in the Experiment Station, University of California, Berkeley.

MAY 31. "How to Keep Fishes in the Home." By Mr. Robert J. Lanier, Assistant Superintendent, Steinhart Aquarium of the California Academy of Sciences, San Francisco.

The total attendance for these afternoon lectures was 1568. They were not continued owing to the lack of a suitable auditorium in the Academy buildings.

The special lecture courses during the year were made possible through the donation, already noted, of a public-spirited citizen. They were given in the Auditorium of the Pacific Gas and Electric Company, 245 Market Street. These lectures were as follows:—

SPECIAL LECTURE COURSE NO. 1.

APRIL 1. "The Growth of the Earth as an Abode of Land Life." By Dr. Bailey Willis, Professor Emeritus of Geology, Stanford University.

APRIL 8. "The Age of the Earth as Taught by the Grand Canyon of the Colorado." By Dr. William Morris Davis, Professor Emeritus of Geology, Harvard University.

APRIL 15. "The Origin and Development of Land Plants." By Dr. Douglas Houghton Campbell, Professor Emeritus of Botany, Stanford University.

APRIL 22. "The Origin, Distribution and History of the Giant Sequoias, the Oldest Living Things in the World." By Dr. Willis Linn Jepson, Professor of Botany, University of California.

SPECIAL LECTURE COURSE NO. 2.

SEPTEMBER 16. "The Story of the Ancient Reptiles." Illustrated. By Dr. Charles L. Camp, Professor of Paleontology, University of California.

SEPTEMBER 24. "The Ancestors of Our Forests." Illustrated. By Dr. Ralph W. Chaney, Chairman, Department of Paleontology, University of California.

SEPTEMBER 30. "The Mammals of the Pleistocene Age as Illustrated by the Species found in the Asphaltum Beds of California." Illustrated. By Dr. Chester Stock, Professor of Paleontology, California Institute of Technology, Pasadena, California.

OCTOBER 7. "The Grasses in Nature and in Human Life." Illustrated with stereopticon slides and motion pictures. By Mr. Morris Halperin, Research Assistant in Agronomy, University of California, Berkeley.

The total attendance for the first and second series of special lectures was 2869.

The Academy publications in 1931 were the following:—

PROCEEDINGS, FOURTH SERIES

Vol. XIX, No. 12, pp. 217-397, 134 text figs. PELAGIC MAMMALS FROM THE TEMBLOR FORMATION OF THE KERN RIVER REGION, CALIFORNIA, By Remington Kellogg. (Issued January 30, 1931.)

Vol. XIX, No. 13, pp. 399-410 and No. 14, pp. 411-482. No. 13—REPORT OF THE PRESIDENT OF THE ACADEMY FOR THE YEAR 1930. By C. E. Grunsky. No. 14—REPORT OF THE DIRECTOR OF THE MUSEUM AND OF THE AQUARIUM FOR THE YEAR 1930. By Barton Warren Evermann. (Issued May 29, 1931.)

Vol. XX, No. 1, pp. 1-7, 3 text figures—GEOGRAPHIC VARIATION IN THE RICHARDSON GROUSE. By Harry S. Swarth. (Issued May 22, 1931.)

Vol. XX, No. 2, pp. 9-104—THE FLORA OF THE REVILLAGIGEDO ISLANDS. By Ivan M. Johnston. (Issued November 18, 1931.)

Vol. XX, Nos. 3 and 4, pp. 105-134, plate 1. No. 3, pp. 105-128, plate 1—THE GENUS POGOGYNE. By John Thomas Howell. No. 4, pp. 129-134—A GREAT BASIN SPECIES OF PHYSOCARPUS. By John Thomas Howell. (Issued December 18, 1931.)

Vol. XX, No. 5, pp. 135-160—NEW SPECIES OF PLANTS FROM WESTERN NORTH AMERICA. By Alice Eastwood. (Issued December 18, 1931.)

OCCASIONAL PAPERS

No. XVII, 162 pp., 17 pl.—LOG OF THE SCHOONER "*Academy*" ON A VOYAGE OF SCIENTIFIC RESEARCH TO THE GALAPAGOS ISLANDS, 1905-1906. By Joseph R. Slevin. (Issued February 14, 1931.)

No. XVIII, 299 pp., 57 text figs., 1 pl.—THE AVIFAUNA OF THE GALAPAGOS ISLANDS. By Harry S. Swarth. (Issued June 29, 1931.)

The Academy again tenders its sincere thanks to Mr. Edward Hohfeld and his associates for legal advice generously extended during the year.

The activities of the Academy in further detail will appear in the accompanying reports of the Director of the Museum, the Superintendent of the Aquarium, the Chief of Exhibits, and the Curators of the several Departments to all of whom thanks for able and faithful service is hereby extended.

PROCEEDINGS

OF THE

CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XX, No. 13, pp. 483-491 DECEMBER 31, 1940

XIII

REPORT OF THE DIRECTOR OF THE MUSEUM AND OF THE AQUARIUM FOR THE YEAR 1931*

BY

BARTON WARREN EVERMANN

Director of the Museum and of the Aquarium

The Annual Report of the Director for the year 1930 was presented to the Annual Meeting, February 18, 1931. The present report, submitted at this Annual Meeting, February 17, 1932, sets forth briefly the scientific and educational activities of the Academy for the calendar year 1931.

PERSONNEL

The employees of the Museum as of January 1, 1932, were as follows: Dr. Barton Warren Evermann, Director and Executive Curator of the Museum and of the Aquarium, and Editor of the Academy publications; Susie M. Peers, Secretary to the Board of Trustees; Annie G. Hobson, Recording Secretary of the Academy; Alice Eastwood, Curator, John Thomas Howell, Assistant Curator, and Kate E. Phelps, assistant, Department of Botany; Edward P. Van Duzee, Curator, Dr. Edwin C. Van Dyke, Curator Emeritus, Dr. Frank R. Cole, Associate Curator in Dipterology, Dr. Frank E. Blaisdell Sr., Research Associate, J. O. Martin and Amy Williamson, assistants, Department of Entomology; Frank Tose, Chief, John Adams, Jenness Richardson, Mammal Taxidermists, J. Stuart Rowley, Marietta Edwards, Richard Cayzer, and Mrs. Clara Rice, Installation and Accessories, William B. Hayden and Cecil Tose, assistants, Department of Exhibits; Dr. Barton Warren Evermann,

* Printed from the John W. Hendrie Publication Endowment.

Curator, and H. Walton Clark, Assistant Curator, Department of Fishes; Joseph R. Slevin, Curator, Department of Herpetology; Dr. Walter K. Fisher, Curator, Department of Invertebrate Zoology; Thomas Cowles, Assistant Librarian, and Veronica J. Sexton, Library Assistant; Harry S. Swarth, Curator, Mrs. Mary E. McLellan Davidson, Assistant Curator, and Joseph Mailliard, Curator Emeritus, Department of Ornithology and Mammalogy; Dr. G. Dallas Hanna, Curator, Dr. Leo George Hertlein, Assistant Curator, Dr. Frank M. Anderson, Honorary Curator, M. Vonsen, Honorary Curator in Mineralogy, Dr. Roy E. Dickerson and C. C. Church, Research Associates, Mrs. Winifred Morrison and John L. Nicholson, Jr., Assistants, Department of Paleontology; Constance W. Campbell, stenographer, part time, Evelyn Larsen, office assistant, part time; Raymond L. Smith, general assistant; Mabel E. Phillips, check-room attendant; William C. Lewis, janitor; Hugh Jones, assistant janitor; Charles F. Baldock, engineer and janitor; Allen Weatherwax, lecture attendant; Archie McCarte, night watch; Nellie Marshall, attendant, part time; Fred Tanaka, janitor, part time.

The Aquarium staff and employees as of January 1, 1932, were as follows: Dr. Barton Warren Evermann, Director; Susie M. Peers, Secretary, part time; Constance W. Campbell, stenographer, part time; Evelyn Larsen, office assistant, part time; Alvin Seale, Superintendent; Robert J. Lanier, Assistant Superintendent; Phyllis Beardslee, doorkeeper; Clynt S. Martin, chief engineer; B. T. Culleton, first assistant engineer; John A. Dwyer, second assistant engineer; Clyde E. Guidry, chief attendant; Jack Solini, first assistant attendant; L. R. Solini, second assistant attendant; Leon Maxwell, third assistant attendant; Frank J. Maxwell, relief engineer and attendant; S. J. Shenefield, carpenter and general utility man; Patrick O'Neill, janitor; Patrick McArdle, assistant janitor; Frank Haley, day watch.

James Campbell was employed for a short time as a temporary assistant in the Department of Fishes.

COOPERATION WITH PUBLIC AND PRIVATE SCHOOLS, OTHER INSTITUTIONS AND INDIVIDUALS

The Museum has continued its service to schools, other institutions, and individuals in their educational and scientific work. Classes from schools, and other groups have been afforded as complete cooperation as possible on their visits to the Museum and Aquarium. Several loans have been made for educational purposes to schools, and a large number for purposes of scientific research to institutions and individuals. The Department research collections are being steadily increased as is shown in the list of accessions and in the Department Reports. Facilities for special study and research

in the laboratories of the different departments have been afforded numerous investigators from time to time during the year.

The usual flow of inquiries for information upon scientific subjects has continued unabated, and considerable time has been devoted to their proper answer by the Director or the Curator of the Department concerned.

Visitors to the Museum in organized groups have been frequent. The largest of these have been classes from public and private schools, conducted by their teachers. It is our policy to give such classes every aid possible and to provide them with guides when feasible, though these must be taken from our regular staff otherwise employed. The employment of at least two such tactful and sympathetic guides or docents whose duties are to aid in interpreting to the visitor the lessons taught by the exhibits is an extremely desirable addition to our force as soon as financial conditions make it possible.

During the year 1931 the number of all visitors to the Museum has been 446,245; to the Steinhart Aquarium 1,003,753; the grand total since the opening of the Museum in 1916 has been 6,922,868; the grand total for the Steinhart Aquarium since the opening in 1923 has been 8,349,572.

A careful detailed list of schools, grades, teachers, number of pupils, and dates of visits has been kept for 1931 as before, and is on file in the office of the Academy. The following summaries present the most important facts.

SCHOOLS VISITING THE MUSEUM IN 1931

Schools of San Francisco:		
Total Number of Pupils	5795	5795
Total Number of Teachers	179	
Total Number of Classes	104	
Schools Outside of San Francisco:		
Total Number of Pupils	1683	1683
Total Number of Teachers	44	
Total Number of Classes	49	
		7478

SCHOOLS VISITING STEINHART AQUARIUM IN 1931

Schools of San Francisco:	
Number of Visiting Pupils	4912
Number of Visiting Teachers	159
Number of Visiting Classes	181
Schools Outside of San Francisco:	
Number of Visiting Pupils	1863
Number of Visiting Teachers	65
Number of Visiting Classes	82

BUILDING ACTIVITIES

Early in the year the architect's plans were approved and contract was let for a new addition to the Academy's museum. This new building will be known as the East Wing of the Museum. In a general way it follows the lines of the West Wing. The principal unit in the East Wing is the *Simson African Mammal Hall*, in which will be displayed 24 habitat groups of some 29 species of African mammals. Mr. Leslie Simson is still in Africa collecting the animals needed for the groups. We have already received from him more than 100 skins and skeletons, and Mr. Tose and his assistants are very busy preparing the groups. It is expected the Simson Hall will be ready for formal opening to the public by next December.

Other units that are provided for in the East Wing are the Director's offices and the general offices of the Academy, the Department of Entomology, the Department of Fishes, and, temporarily, certain work rooms for the Department of Exhibits. There are also in the East Wing several special rooms such as supply room, janitor's room, cold-storage hide room, fumigation room, dark room, lavatories, rest rooms, Academy publications store room, etc.

The rooms in the West Wing formerly occupied by the Department of Entomology have been added to the Department of Paleontology; the three rooms formerly occupied by the general office and the Director have been assigned to the Department of Botany. All the research collections of fishes have been transferred from the Aquarium basement to the new quarters which the Department of Fishes now has in the basement of the East Wing. These quarters consist of the main Research Collection Room, 132 ft. long by 30 ft. wide, a Laboratory 51 ft. by 20 ft., and 3 offices 22 ft. 6 in. by 11 ft. 6 in., 15 ft. 6 in. by 11 ft. 6 in., and 14 ft. by 11 ft. 6 in., respectively, or a total of 5678 sq. ft., to which can be added 2068 sq. ft. in the publications store room (making a total of 7746 square feet of floor space when needed). This will house a collection of fishes much larger than any now existing in America. It is our ambition to make the collection the largest in America.

ACKNOWLEDGMENTS

Friends of the Academy continue to show their appreciation of what we are doing for the community and for science by donating to the Museum and the Aquarium desirable natural history specimens and other objects of interest.

To all who have thus shown their interest in our work grateful thanks are extended. Through the field activities of our scientific staff, the exchange, donation and purchase of specimens the research collections have continued to increase.

A complete list of these accessions is on file in the offices of the Academy.

As in the past, the Academy is greatly indebted to the Southern Pacific Company, the Atchison, Topeka and Santa Fe Railway System, the Matson Navigation Company, and the Los Angeles Steamship Company for many courtesies that have aided so materially in our field work. Their cooperation is greatly appreciated.

FINANCIAL STATEMENTS

REPORT OF THE TREASURER

For the fiscal year ending December 31, 1931

January 1, 1931, Balance due Crocker First National Bank		$ 3,228.25
Receipts:		
Dues	$ 3,298.00	
Charles Crocker Scientific Fund Endowment Income	1,797.04	
James Lick Endowment Income	72,404.40	
General Income	19,911.30	
John W. Hendrie Endowment Income	868.87	
Post Card Sales	687.35	
Publication	545.55	
Interest	875.85	
Bills Payable	106,000.00	
Bills Receivable	77,000.00	
Bills Receivable Ignatz Steinhart Trust	1,000.00	
Ignatz Steinhart Trust Interest	245.07	
Duplicate Sales Account	2.50	
W. G. Wright Fund	12.00	
Park Birds Handbook Fund	183.30	
Wild Life Protection Fund	100.00	
Lecture Fund Donation	750.00	
Total Receipts		$285,681.23
		$282,452.98
Expenditures:		
East Wing Construction	$190,305.10	
Sewer Construction	2,685.29	
Interest	11,959.45	
Contingent Fund	418.73	
Salary Expense General	20,379.83	
Department Salaries	22,965.51	
Earthquake Insurance Sinking Fund	1,200.00	
Steinhart Aquarium Equipment	1,325.32	
Insurance	1,184.91	
Museum Department Appropriations	25,100.20	
Post Cards	600.00	
Publication	7,499.07	
Library	4,114.13	
Sundry Creditors	209.10	
Expense	3,133.13	
Lecture Expense	416.24	
Total Expenditures		$293,496.01
January 1, 1932, Balance due Crocker First National Bank		$ 11,043.03

F. W. BRADLEY, *Treasurer.*

Examined and found correct,

PACE, GORE & MCLAREN, *Certified Public Accountants.*

San Francisco, Calif., February 11, 1932.

INCOME AND OPERATING EXPENSES

For the fiscal year, January 1, 1931, to December 31, 1931

Income:		
Charles Crocker Scientific Fund Endowment Income	$ 1,797.04	
James Lick Endowment Income	72,404.40	
General Income	19,911.30	
Dues	3,293.00	
Interest on Temporary Investments	875.85	
Profit on Post Card Sales	514.25	
Duplicate Sales Account	2.50	
Total Income		$ 98,798.34
Expenditures:		
General Expense	$ 3,207.99	
Salaries	43,441.59	
Interest	12,429.08	
Insurance	1,184.91	
Total Expenditures:		$ 60,263.57
Net Income Transferred to Surplus Account		$ 38,534.77

SUMMARY OF SURPLUS ACCOUNT

December 31, 1931

Balance January 1, 1931		$595,531.23
Additions:		
Net Income for the year ended December 31, 1931	$ 38,534.77	
Transfer from John W. Hendrie Endowment Income equal to the amount expended for certain publications	4,137.90	
Total Additions to Surplus		$ 42,672.67
		$638,203.90
Deductions:		
Depreciation	$ 16,403.66	
Transfer to Earthquake Insurance Sinking Fund Reserve	1,200.00	
Correction of erroneous charge to Furniture and Fixtures	77.00	
Total Deductions from Surplus		$ 17,680.66
Surplus, December 31, 1931		$620,523.24

BALANCE SHEET

December 31, 1931

Assets

Property:			
Real Estate, 831-833 Market Street			$600,000.00
Commercial Building, 833 Market Street	$516,818.66		
Less: Reserve for Depreciation	121,452.34	395,366.32	
Real Estate, Jessie Street		8,083.65	
			$1,003,449.97
Museum, Golden Gate Park:			
Building Construction	192,025.92		
Less: Reserve for Depreciation	45,119.37	146,906.55	
East Wing—under construction		190,305.10	
Sewer—under construction		2,687.19	
General Collections		239,482.23	
Library and Equipment		167,937.23	
Tools and Equipment	50,871.29		
Less: Reserve for Depreciation	11,996.34	38,874.95	
Office Furniture	6,401.89		
Less: Reserve for Depreciation	3,719.31	2,682.58	
			$788,875.83
Investment Securities			8,703.42
Ignatz Steinhart Trust:			
Bills Receivable	$ 5,000.00		
Steinhart Aquarium Construction	263,390.29		
Steinhart Aquarium Equipment	35,668.40		
Steinhart Aquarium Revolving Fund	5,000.00		
Uninvested Cash on Hand	98.13		
			$309,156.82
Current Assets:			
Bills Receivable	2,000.00		
Postcards in Stock	1,677.23		
Cash on Hand	186.48		
Advances to employees doing field work	500.00		
			$ 4,363.71
Total			$2,114,549.75

BALANCE SHEET—Continued

Liabilities

Endowments:		
James Lick Endowment	$804,902.31	
Charles Crocker Scientific Fund Endowment	20,000.00	
John W. Hendrie Endowment	32,770.85	
		$857,673.16
Funds Held for Special Purposes:		
Alvord Bequest Botanical	$ 5,000.00	
John W. Hendrie Endowment Income	4.71	
Earthquake Insurance Sinking Fund Reserve	8,603.42	
W. G. Wright Fund	54.57	
Park Birds Handbook Fund	296.60	
Wild Life Protection Fund	111.10	
Lecture Fund	274.65	
		$ 14,345.05
Ignatz Steinhart Trust:		
Principal	$250,000.00	
Interest	59,156.82	
		$309,156.82
Notes and Accounts Payable:		
Bills Payable	$301,000.00	
Accounts Payable	710.32	
Due Crocker First National Bank (Overdraft)	11,141.16	
		$312,851.48
Surplus		$620,523.24
Total		$2,114,549.75

SUSIE M. PEERS,
Secretary Board of Trustees.

We have examined the foregoing Balance Sheet, together with the books and accounts of the California Academy of Sciences, and in our opinion, it is properly drawn up so as to exhibit a true and correct view of the Academy's affairs, as shown by the books.

PACE, GORE & MCLAREN,
Certified Public Accountants.

San Francisco, Calif.
February 11, 1932.

PROCEEDINGS

OF THE

CALIFORNIA ACADEMY OF SCIENCES

FOURTH SERIES

VOL. XX, No. 14, pp. 493-521 DECEMBER 31, 1940

XIV

REPORT OF THE PRESIDENT OF THE ACADEMY AND ACTING DIRECTOR OF THE MUSEUM AND THE AQUARIUM FOR THE YEAR 1932 WITH DEPARTMENTAL REPORTS FOR THE TWO YEARS 1931 AND 1932*

BY

C. E. GRUNSKY

President and Acting Director of the Museum and Aquarium

When in August 1932 it became apparent that on account of ill health Dr. Evermann would have to be temporarily released from active duty as Director and Executive Curator, it naturally fell to the President to carry on the work of the Academy with which he had been in intimate touch throughout Dr. Evermann's entire administration. For the time being, therefore, he has accepted the responsibility of Acting Director of the Museum and of the Steinhart Aquarium.

Dr. Evermann was forced in June to seek rest for a time at Stanford Hospital. Unfortunately it was found, despite his robust appearance, that his physical disabilities were not as trifling as his friends had hoped, and there was a gradual loss of strength until, on September 27 at his home in Berkeley, the end came.

It was my privilege as President of the Academy and member of its Council and Board of Trustees to have a voice in authorizing the employment by the Academy of a salaried director, and it was my privilege, too, to have a voice in the selection of Dr. Evermann for the newly created position. Our relations at once became intimate,

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* Printed from the John W. Hendrie Publication Endowment.

and throughout the eighteen years of close association in Academy work which then followed there was never an unpleasant occurrence to interfere with whole-hearted cooperation.

The passing of Dr. Evermann was keenly felt by all connected with Academy affairs; but natural science in general is the greatest sufferer. He was an indefatigable worker, always ambitious to acquire new information and ever intolerant of those who imagined their education was complete. He took great pride in his former connections with educational pursuits, and always endeavored in every possible way to advance the educational phase of the Academy's activity. A class of school children being led through the exhibition halls was given as much consideration as a group of naturalists. The enquiring mind of youth was to him one of the most inspiring of nature's phenomena.

He was born on a farm near Lovilia, Monroe County, Iowa, October 24, 1853. His father was Andrew Everman. His mother's maiden name was Nety Gardner. The family moved to a farm in Carroll County, Indiana, when Barton Warren was a young boy, and in that state he grew up, acquired his education and married Meade Hawkins on October 24, 1875. He graduated from Indiana University in 1886, received the degree of Master of Arts in 1888, and Doctor of Philosophy in 1891. He was honored by receiving the degree of Doctor of Laws from the University of Utah in 1922, and from Indiana University in 1927.

He became interested in natural history as have many young farmer boys, and early began making a collection of birds and eggs. This love for ornithology never left him and he was a prolific writer on the subject.

He taught in the public schools of Indiana and California during 1871-1881; was County School Superintendent of Carroll County, Indiana, during 1883-1885, and head of the Department of Biology of the Indiana State Normal School from 1886 to 1891. From 1891 to 1914 he held various responsible positions with the U. S. Bureau of Fisheries, and it was during this period that some of his most valuable publications on fishes were issued.

The fame of Dr. Evermann rests largely upon his work in systematic Ichthyology, but he did not by any means confine his efforts to that one subject. His card index of titles at the time of his death contained 387 entries. A hurried classification of these show 196 papers on fishes, 59 on birds, 30 on mammals, and the remainder on miscellaneous subjects.

Much of his material for publication was prepared while at the same time he attended to the strenuous duties of an administrative position. His official correspondence was largely carried on by rapid fire dictation, but many personal letters and his manuscripts were slowly and carefully written in long hand.

Rarely indeed does a man leave behind so little unfinished work. A paper on the fishes of the Revillagigedo Islands Expedition of

1925 (co-author with H. Walton Clark), and his annual Academy report for 1931 were completed, but unpublished, at the time of his death.

His trips to the field to study or collect specimens were his greatest recreation, and his enthusiasm upon such occasions was contagious. On these excursions he was in the habit of keeping detailed notes on various subjects. A series of books of these observations has been left to the Academy. Often he kept lists of birds observed, even on short automobile journeys. Even up to the time when he had reached the age of 75 he could easily maintain his place on fishing and collecting trips, and in camp he insisted upon doing more than his share of the routine tasks.

Because of valuable gifts and contributions to the Academy's natural history material and to its library, Dr. Evermann became a "Patron" of the Academy on March 26, 1921. His interest in the African Hall of the Academy, which is made possible by the generosity of Mr. Leslie Simson, prompted Dr. Evermann to become sponsor for one of its smaller exhibits, and he presented the Academy with $1,000 to cover the cost of the installation of the Dik-Dik habitat group.

By bequest, and by the generosity of his son Toxaway Bronte Evermann and his daughter Mrs. Edith Evermann Humphrey, most of Dr. Evermann's scientific books and papers have become the property of the Academy to which he had devoted so much of his life and energy.

As announced at our last Annual Meeting on February 17, 1932, our First Vice-President, Mr. Otto von Geldern, that day reelected, succumbed to heart trouble.

Otto von Geldern, the son of Gustav von Geldern, was born in Berlin, Germany, on September 6, 1852. He was brought to the United States as a child, spending his youth at Sonoma, California. He was educated in part in this country, and in part at gymnasia and technical schools in Germany.

His first professional experience was with his father who was an engineer and architect. In 1872, Mr. von Geldern returned to California, from Germany, and served as an Assistant Engineer on the construction of the Mare Island Dry Dock. Thereafter until 1889 he was almost continuously an hydrographic assistant with the United States Coast and Geodetic Survey, or an engineer assistant with the United States Army Engineers. He thereupon established himself in general engineering practice in San Francisco.

Because of his experience on the harbors of the Pacific Coast, Mr. von Geldern had become thoroughly familiar with the ebb and flow of the tides, and his knowledge of this subject, and of the problems connected with a delimitation of shore areas, made him an authority on tide-marsh and ocean-front ownerships. Of valuation matters,

too, he made a specialty, his advice being frequently called for in proceedings before rate-fixing authorities and in the Courts.

He had great command of language, delighting in producing occasional short poems and highly meritorious accounts of early California life and customs. It would have been an easy transition for him from engineer to poet and philosopher, but he found his principal pleasure and relaxation in solving intricate mathematical problems.

His mathematical ability served him well when he was called upon to assist the government in locating defense armament about San Francisco Bay. In this connection, Mr. von Geldern invented a new and practical method of adjusting a modern coast defense gun, an account of which was published at the Artillery School, Fortress Monroe, Virginia, upon command of Major General Arthur MacArthur, U. S. A., in January 1905. This method included, in the complete adjustment of large guns and mortars, the determination of errors in azimuth, elevation, and verticality, as well as the errors of the telescopic gun-sight.

In professional circles Mr. von Geldern will be remembered as an able engineer and a member of that fine old school of practitioners who hold the ethics of their calling above gain. He was known and respected, however, far beyond the boundaries of professional fields. In his youth, he knew personally many of the men whose names made California history during the period of transition from Mexican to American control. Among others, he was acquainted with General Vallejo—as a youth knows older men—and was intimate with his family. More than any other, perhaps, he is responsible for clearing the General's record of the charge of opportunism made by inaccurate or prejudiced historians. In the course of the studies undertaken in the interest of General Vallejo's history, Mr. von Geldern developed into one of the best authorities on the history of the so-called Sonoma District of Mexican California, the Kearny "filibuster," and the frequently exaggerated episode that men refer to as the "Bear Flag Republic."

He was married on July 10, 1884, to Mathilda Schildt, by whom he is survived. He is also survived by his three sons: Dr. Charles E., Edward B., and Dr. Hans S. von Geldern, and by seven grandchildren.

Mr. von Geldern became a member of the Academy in 1896 and was made a life member in 1921. He was elected Second Vice-President in 1904 and First Vice-President in 1931. He was also a Past-President of the Astronomical Society of the Pacific, was a member of various other scientific organizations, and served for many years as a Trustee of the Mechanics' Institute of San Francisco, being its President at the time of his death, and as such also a Regent of the University of California.

Mr. von Geldern's life was a full one, and not restricted to the attainment of his own selfish ambitions. He was an asset to his

State and an example of the type of citizen on whom the country must depend for the maintenance of its best traditions.

The vacancy in the First Vice-Presidency caused by the death of Mr. von Geldern was filled by the election of Dr. F. M. MacFarland by the Council. Dr. E. P. Meinecke was elected to the position of Corresponding Secretary theretofore held by Dr. MacFarland.

During this year there has also passed away Mr. E. J. Molera, who was President of the Academy from 1903 to 1909. Mr. Molera was long active on the Pacific Coast as a civil engineer. He was born at Vich in Spain on November 14, 1846. He received his technical education at the Royal Academy of Engineers at Madrid from which he was graduated in 1867.

As early as 1870 he came to San Francisco and found employment with the United States Engineers on harbor work, his name being connected with surveys of Blossom Rock preceding its removal as an obstruction to navigation in San Francisco Bay. Thereafter until 1876 he was the Assistant Lighthouse Engineer of the 12th District with headquarters at San Francisco. He then established himself permanently in private practice as a consultant civil engineer at San Francisco, making topographic surveys, planning irrigation works and the like. He was called to Mexico in 1881 by President Gonzales to outline a project for the drainage of the Valley of Mexico. A few years later he was employed by a syndicate of capitalists as consultant on the completion of the Tehuantepec Railroad. This work included studies for the harbor terminals upon both the Atlantic and Pacific oceans. His professional practice covered not only a wide range in engineering, but extended also into the architectural field.

Mr. Molera was a student of early Mexican history, and from time to time gave delightful accounts of the results of his studies to his favorite technical organization—the Technical Society of the Pacific Coast.

He was married on April 28, 1875, to Miss Amelia Cooper (deceased) of Monterey, California. Of his two children, Andrew J. and Frances M., the former passsed away a few months before his father's death.

THE SIMSON AFRICAN HALL

Work on the installation of the groups of wild life in the hall on the main floor of the Academy's new East Wing has been pushed forward as rapidly as the resources of the Academy would permit.

By holding down the field work in the Academy's several research departments to a minimum, it was found possible to keep a small force at work in the Department of Exhibits. This is done, of course, in anticipation of a refund when generous friends of the Academy come forward with contributions as sponsors of individual groups.

There will be ten of the large groups, 13 intermediate, smaller ones, and one very large group at the far end of the hall. It is hoped and expected that the Academy can dedicate these several groups to individuals, in return for contributions adequate to cover the cost of their installation.

Such installations of habitat groups in the West Wing were made possible by donations from William van Antwerp, W. B. Bourn, J. D. Grant, Herbert Fleishhacker, William H. Crocker and others. For the work in the East Wing, except for several of the painted backgrounds, only a single donation of $1,000 for one of the smaller groups is thus far to be reported.

The circumstances which led the Academy to erect its new East Wing and to undertake the installation of the habitat groups of African Wild Life are sufficiently set forth in the President's report for the year 1930. It was hoped a year ago that there would certainly be enough outside financial assistance to keep our organization of a Department of Exhibits together. But this hope has not thus far been realized. Instead of finding ourselves in a position to open the African Hall to the public at least for part time in April, 1933, the opening will have to be indefinitely postponed.

THE TEMPLETON CROCKER EXPEDITION OF THE CALIFORNIA ACADEMY OF SCIENCES, 1932

The offer to Director Evermann by Mr. Templeton Crocker to conduct a scientific expedition to the Galapagos Islands and other places in the Pacific Ocean, devoting himself and his yacht *Zaca* completely to the service of the Academy for a period of more than five months, was gratefully accepted. Thereupon the yacht was suitably outfitted and departed from San Francisco on March 10. The expedition returned to the same port on September 1. An account of this expedition and of its contributions to our knowledge of the fauna and flora of the coast and islands of the Pacific Ocean will be published in Volume XXI of the Proceedings of the Academy.

The Trustees and the Council in joint session on September 19 formally expressed their appreciation to Mr. Crocker of his generous contributions to the study of natural history problems and declared him to be a "Benefactor" of the Academy.

ACADEMY MEMBERSHIP

The following information relating to the membership and membership changes during 1932 will be of interest.

The members at the end of 1932 were classified as follows:

Benefactor	1
Patrons	18
Honorary Members	19
Life Members	88
Fellows	60
Members	846
Junior Members	19
Total	1051

Of these:

5	Life Members are also Fellows	5
6	Patrons are also Life Members	6
1	Fellow is also an Honorary Member	1
3	Fellows are also Patrons	3
1	Benefactor is also a Patron	1
	Total	16
	Actual Membership	1035

On January 1, 1932, the number of members stood at		1139
New Members were added during the year	34	
Members lost by death	28	
Members resigned	45	
Members dropped (non-payment of dues)	65	
	138	
Net loss during year		104
Leaving the membership on January 1, 1933, at		1035

The Academy carries on its list of Benefactors the following names:

Living

Mr. Templeton Crocker

Deceased

Mr. James Lick
Mr. Ignatz Steinhart

The Academy carries on its list of Patrons the following names:

Living

Dr. Frank E. Blaisdell
Mr. William B. Bourn
Mr. Templeton Crocker
Hon. William H. Crocker
Mr. Peter F. Dunne
Miss Alice Eastwood
Mr. Herbert Fleishhacker
Hon. Joseph D. Grant
Mr. Edward Hohfeld
Mrs. Albert Koebele
Mr. A. Kingsley Macomber
Mr. John W. Mailliard
Mr. Joseph Mailliard
Mr. M. Hall McAllister
Dr. Walter B. Scaife
Mr. William C. Van Antwerp
Mr. Edward P. Van Duzee
Dr. E. C. Van Dyke

Deceased

Mr. William Alvord
Mr. George C. Beckley
Mr. Charles Crocker
Dr. Barton Warren Evermann
Mr. W. M. Giffard
Mr. John W. Hendrie
Mr. William F. Herrin
Mr. Henry M. Holbrook
Mrs. Charlotte Hosmer
Mr. Ogden Mills
Mr. G. Frean Morcom
Mr. Alexander F. Morrison
Mr. Amariah Pierce
Hon. Leland Stanford
Dr. John Van Denburgh

Academy members who were called by death in 1932 are as follows:

Mr. George C. Beckley	Patron	December 15, 1932
Mr. Robert I. Bentley	Member	February 22, 1932
Mr. Richard Cayzer	Member	March 3, 1932
Mr. Frank J. Devlin	Member	February 6, 1932
Mr. Donald R. Dickey	Member	April 13, 1932
Mr. Frederick T. Duhring	Member	January 23, 1932
Mr. W. J. Dutton	Member	August 23, 1932
Mr. Samuel Cary Evans	Member	December 31, 1932
Dr. Barton Warren Evermann	Patron	September 27, 1932
Professor Rufus L. Green	Fellow	November 17, 1932
Dr. Harvey Monroe Hall	Fellow	March 11, 1932
Mr. Alexander Hamilton	Member	October 14, 1932
Mr. Thomas A. Hays	Member	April 5, 1932
Miss Anna Head	Member	December 24, 1932
Mr. Ralph Hoffmann	Member	July 21, 1932
Mr. Edward Jesurun	Life Member	October 29, 1932
Mr. Walter Loewy	Member	February 11, 1932
Mr. E. J. Molera	Life Member	January 14, 1932
Mr. Charles C. Moore	Member	April 17, 1932
Mr. George W. Moore	Member	July 28, 1932
Mr. G. Frean Morcom	Patron	March 25, 1932
Mr. Ransom Pratt	Life Member	March 30, 1932
Mr. F. A. Robbins	Member	May 27, 1932
Mr. Andrew W. Rose	Life Member	April 16, 1932
Mr. John Spencer	Member	December 31, 1932
Mr. Miles Standish	Member	June 22, 1932
Professor Edwin C. Starks	Life Member	December 29, 1932
Mr. Otto von Geldern	Life Member	February 17, 1932

LECTURES

During the year 1932 eleven free lectures were delivered at the stated meetings of the Academy, as follows:

JANUARY 6. "The Philippines." Illustrated. By Dr. Albert W. Herre, Curator of the Zoological Museum, Stanford University.

MARCH 2. "Guadalupe Island, Its Animals and Plants and Its Geology." A Symposium, participated in by Captain Garland Rotch, Mr. John Thomas Howell, and others. Illustrated with moving pictures.

APRIL 6. "Dr. Henry Power, Early English Microscopist, Friend and Contemporary of Sir Thomas Browne, with Selections from His Experimental Philosophy." By Mr. Thomas Cowles, Assistant Librarian, California Academy of Sciences.

MAY 4. "The Science of Taxation." By Mr. E. R. Zion.

JUNE 1. "Up the Amazon and over the Andes." Illustrated. By Mrs. Ynes Mexia, San Francisco.

JULY 6. "Flags; Facts and Fallacies." By Mr. C. B. Lastreto, San Francisco.

AUGUST 3. "Major Business Cycles." By Dr. C. E. Grunsky, President, California Academy of Sciences.

SEPTEMBER 7. "Wild Life on the Great Rivers of Yellowstone Park." Illustrated. By Mr. George M. Wright, Field Naturalist, National Park Service.

OCTOBER 5. "Account of the Templeton Crocker Expedition: The Birds." Illustrated. By Mr. Harry S. Swarth, Curator, Department of Ornithology and Mammalogy, California Academy of Sciences.

NOVEMBER 2. "The Templeton Crocker Expedition of the California Academy of Sciences." A symposium participated in by the following: Templeton Crocker: Account of the Expedition. Captain Garland Rotch: The *Zaca* and Her Crew. Harry S. Swarth, Curator of the Department of Ornithology: Birds. H. Walton Clark, Assistant Curator of the Department of Fishes: Tidepools and Their Inhabitants. John Thomas Howell, Assistant Curator of the Department of Botany: Plants. Robert J. Lanier, Assistant Superintendent of the Steinhart Aquarium: Live Fishes and Deep-Sea Dredging. E. P. Van Duzee, Curator of the Department of Entomology: Insects. Dr. Albert E. Larsen, Medical Officer of the Expedition: Plankton and Termites. This symposium was also one of the Academy's Fall course of four lectures on the general subject "The Beauties of Nature."

DECEMBER 7. "Account of the Templeton Crocker Expedition: The Plants." Illustrated. By Mr. John Thomas Howell, Assistant Curator of Botany, California Academy of Sciences.

The free lectures on the general subject "The Beauties of Nature," four in the spring and four in the fall, made possible by the generosity of a friend of the Academy, were continued as follows:

SPECIAL LECTURE COURSE NO. 3

MAY 11. "Our National Park System: What the Federal Government is doing to conserve and make known the Beauties of Nature." Illustrated with colored slides and motion pictures. By Colonel John R. White, Superintendent, Sequoia and General Grant National Parks.

MAY 18. "Western American Scenery As Exemplified In Our National Parks." Illustrated with colored slides. By Francis P. Farquhar, Vice President of the Sierra Club.

MAY 25. "Off the Track in Central America; the History, the Peoples, and the Natural Beauties of Those Little-known Countries." Illustrated with stereopticon slides. By John Malcom Nicol, mining engineer and traveler.

JUNE 1. "Spiritual Values in the Appreciation of Nature." By Dr. John C. Merriam, President of the Carnegie Institution of Washington.

SPECIAL LECTURE COURSE NO. 4

OCTOBER 19. "Up the Amazon and Over the Andes": An account of a trip for the collection of botanical specimens secured for the California Academy of Sciences, the University of California and other institutions. Illustrated with lantern slides. By Mrs. Ynes Mexia.

OCTOBER 26. "The Music of the Out-of-Doors." Illustrated with hand-colored slides. By Bert Harwell, Park Naturalist of the Yosemite National Park.

NOVEMBER 2. "The Templeton Crocker Expedition of the California Academy of Sciences." A symposium; illustrated. Templeton Crocker: Account of the Expedition. Captain Garland Rotch: The *Zaca* and Her Crew. Harry S. Swarth, Curator of the Department of Ornithology: Birds. H. Walton Clark, Assistant Curator of the Department of Fishes: Tidepools and Their Inhabitants. John Thomas Howell, Assistant Curator of the Department of Botany: Plants. Robert J. Lanier, Assistant Superintendent of the Steinhart Aquarium: Live Fishes and Deep-sea Dredging. E. P. Van Duzee, Curator of the Department of Entomology (not a member of the Expedition): Insects. Dr. Albert E. Larsen, Medical Officer of the Expedition: Plankton and Termites.

NOVEMBER 9. "Glaciation of the Sierra Nevada." Illustrated. By Dr. Eliot Blackwelder, Professor of Geology, Stanford University.

In this connection grateful acknowledgment is made not alone to the Academy's unnamed friend, but also to the Pacific Gas and Electric Company whose auditorium was placed at the disposal of the Academy for these lecture courses.

ACADEMY PUBLICATIONS IN 1932

Owing to the urgent need for economy the Academy has been forced to hold its publications to a minimum. Even the annual reports of its President and Director have been postponed to a more favorable season.

PROCEEDINGS, FOURTH SERIES

Vol. XX, No. 6, pp. 161-263, plates 2-18—THE DIATOMS OF SHARKTOOTH HILL, KERN COUNTY, CALIFORNIA. By G. Dallas Hanna. (Issued January 8, 1932.)

Vol. XX, No. 7, pp. 265-267—A NEW SUBSPECIES OF CORAL SNAKE FROM GUATEMALA. By Karl P. Schmidt. (Issued January 8, 1932.)

Vol. XX, No. 8, pp. 269-290—BIRDS AND MAMMALS FROM THE KOOTENAY VALLEY, SOUTHEASTERN BRITISH COLUMBIA. By Joseph Mailliard. (Issued January 8, 1932.)

Vol. XX, No. 9, pp. 291-465—MISCELLANEOUS STUDIES IN THE ELATERIDAE AND RELATED FAMILIES OF COLEOPTERA. By Edwin C. Van Dyke. (Issued March 3, 1932.)

Vol. XX, No. 10, pp. 467-469—AGONOSTOMUS HANCOCKI SEALE, SP. NOV. By Alvin Seale. (Issued December 30, 1932.)

PERSONNEL

The personnel connected with the Academy at the beginning of the year 1933 either as paid employees, or as accredited research associates or assistants, sometimes, of course, without compensation, are here enumerated. Those who are noted as part time employees are being paid in part out of funds received from the City for the operation of the Aquarium, their duties being divided between the Museum and the Aquarium.

Dr. C. E. Grunsky, Acting Director and Executive Curator of the Museum and of the Aquarium, and Editor of the Academy publications; Susie M. Peers, Secretary to the Board of Trustees; Annie G. Hobson, Recording Secretary of the Academy; Alice Eastwood, Curator, John Thomas Howell, Assistant Curator, and Kate E. Phelps, Assistant, Department of Botany; Edward P. Van Duzee, Curator, Dr. Edwin C. Van Dyke, Honorary Curator, Dr. Frank R. Cole, Associate Curator in Dipterology, Dr. Frank E. Blaisdell, Research Associate, and Amy Williamson and J. O. Martin, assistants, Department of Entomology; Frank Tose, Chief of Exhibits, J. Stuart Rowley, Jenness Richardson, Marietta Edwards, J. M. Barclay, William B. Hayden, John Adams, and Cecil Tose as Assistants and Grace M. Betts and Captain Charles B. Hudson, artists, Department of Exhibits; H. Walton Clark, Curator, Department of Fishes; Joseph R. Slevin, Curator, Department of Herpetology; Veronica J. Sexton, Library Assistant; Harry S. Swarth, Curator, Mary E. McLellan Davidson, Assistant Curator, and Joseph Mailliard, Curator Emeritus, Department of Ornithology and Mammalogy; Dr. G. Dallas Hanna, Curator, Dr. Leo George Hertlein, Assistant Curator, Dr. Frank M. Anderson, Honorary Curator, and M. Vonsen, Honorary Curator in Mineralogy, Dr. Roy E. Dickerson and Dr. C. C. Church, Research Associates, Department of Paleontology; Constance W. Campbell, stenographer, part time; Evelyn Larsen, office assistant, part time; Raymond L. Smith, general assistant; Mabel E. Phillips, checkroom attendant; William C. Lewis, janitor; Raymond Jones, assistant janitor; Allen Weatherwax, lecture attendant; Frank Haley, day watch; Archie McCarte, night watch; Nellie Marshall, attendant, part time, C. F. Baldock, engineer and janitor, East Wing.

The Aquarium staff and employees as of January 1, 1933, were as

follows: Dr. C. E. Grunsky, Acting Director; Susie M. Peers, Secretary, part time; Constance W. Campbell, stenographer, part time; Evelyn Larsen, office assistant, part time; Alvin Seale, Superintendent; Robert J. Lanier, Assistant Superintendent; Phyllis Beardslee, doorkeeper; B. T. Culleton, first assistant engineer; John A. Dwyer, second assistant engineer; Frank J. Maxwell, relief engineer; S. J. Shenefield, carpenter and general utility man; C. E. Guidry, chief attendant; Jack Solini, first assistant attendant; Leon Maxwell, third assistant attendant; Willard R. Martin, assistant collector; Patrick McArdle, assistant janitor; L. R. Solini and Lloyd Shebley, assistants, part time; and Frank Haley, day watch.

During 1932 the following changes in personnel took place.

Dr. Walter K. Fisher resigned his position as Curator of the Academy's inactive Department of Invertebrate Zoology on November 26, 1932.

William B. Hayden, an assistant in the Department of Exhibits, resigned on February 1, and John Adams, an assistant in the same Department, on August 2, 1932. This Department lost Richard Cayzer, an assistant, by death on March 3, 1932. From January 2 to July 19, 1932, the Library had the free services of Edwin J. Coman, a student of library methods. In March the services of Fred Tanaka as janitor's assistant were dispensed with. Part-time service as an assistant in the Department of Ornithology and Mammalogy was rendered by A. E. Borell covering February 15 to 19 and March 7 to 29.

The Academy makes grateful acknowledgment, too, of the part-time work by Hamilton Peers, as a voluntary assistant during October and November in the listing of books and pamphlets, bequeathed to the Academy by the late Dr. Evermann.

The Academy has suffered from the general business depression of the last few years and in consequence been forced to curtail activities. This has resulted in a reduced output of scientific publications and in the making of other retrenchments resulting in the reduction of the number of employees. Among those whose services were dispensed with are Thomas Cowles, Assistant Librarian, January 1, 1933; Louis Solini, second assistant attendant at the Steinhart Aquarium, June 30; Clynt S. Martin, Chief engineer at the Steinhart Aquarium, June 1; and Patrick O'Neill, janitor at the Aquarium, June 30, 1932. Hugh R. Jones, janitor, became ill in February and, not being able to return, his place was filled by his son, Raymond L. Jones. John L. Nicholson, Jr., has been employed part-time at intervals during the year in the Department of Paleontology and in the Library. Winifred Morrison was employed part-time in the Department of Paleontology from January to the middle of March.

ITEMS OF INTEREST

Full information relating to the receipts and expenditures by the Academy during the year 1932 is presented in the Treasurer's Report here annexed.

The income received and available for research activities and for operation of the Academy's Natural History Museum has fallen about $6,000 short of what had been estimated. Nevertheless, the Academy has carried on without reducing salaries, though with enforced curtailment of published output. How the insufficient allowance by the City for the Steinhart Aquarium has impaired the display of aquatic life is apparent to all who visit the same.

The Annual Meeting of February 17, 1932 was the first Academy meeting to be held in the new East Wing.

The Academy was invited to participate in the Captain G. Allan Hancock Expedition to the coast of Mexico, Central America, Malpelo Islands, Cocos Island, and the Galapagos Islands from December 1, 1931 to March 1, 1932, and was represented by Mr. Alvin Seale, Superintendent of the Steinhart Aquarium, and by Dr. Leo G. Hertlein, Assistant Curator of the Department of Paleontology.

Dr. C. C. Church was made Research Associate in the Department of Paleontology on February 27, 1932.

The Academy received an endowment of $10,000 from its unnamed friend who is sponsoring lecture courses on the general subject "The Beauties of Nature." The income from this endowment assures the continuance of these lectures, which have now been made a regular activity of the Academy.

Mr. Templeton Crocker has made a donation of $1,000 to the Academy's publication fund.

Mr. M. Hall McAllister has again contributed $100 to further activities relating to the preservation of wild life.

Mr. Leslie Simson returned from Africa early in January 1933, having completed the collection of 220 specimens of African mammals for the Academy's "Simson African Mammal Hall." Six of the painted backgrounds for the large groups in the African Hall are nearing completion and two small ones are complete.

Regardless of the fact that San Francisco should have the finest and best equipped aquarium in the world the operation of the Academy's Steinhart Aquarium was sadly crippled by an inadequate maintenance by the City. The Academy's request for $50,000 was cut by the Mayor in his recommendation to the Board of Supervisors to $45,000 and, despite the earnest representations of the Director and of the President of the Academy, the Supervisors made a second ten percent deduction from our needs, cutting down the budget allowance to $40,500.

The Academy was treated as though it were a city department, and the fact was ignored that any reduction of the requested allowance meant a crippling of our institution. There was no remedy.

To meet the situation the outside pools were closed down and the ten seals were sent to different parts of the country. The Bureau of Fisheries, too, was notified that we could not accept additional fur seals, for which arrangements had been made. Several employees were discharged and others put on part time. It is hoped that this year the Academy will be permitted to again operate at its established program.

MUSEUM ATTENDANCE FOR 1932

Cooperation with schools and other organizations and groups interested in natural history has been continued. Without listing each such school or group it is to be noted that during the year 1932 the Academy's Museum was visited by

Schools of San Francisco:

Total Number of Pupils	5769
Total Number of Teachers	206
Total Number of Classes	118

Schools Outside of San Francisco:

Total Number of Pupils	2165
Total Number of Teachers	64
Total Number of Classes	76

The total number of visitors to the Museum during 1932 was 381,559.

AQUARIUM ATTENDANCE IN 1932

Without listing each such school or group it is to be noted that during the year 1932 the Academy's Aquarium was visited by

Schools of San Francisco:

Total Number of Pupils	5706
Total Number of Teachers	199
Total Number of Classes	229

Schools Outside of San Francisco:

Total Number of Pupils	2598
Total Number of Teachers	72
Total Number of Classes	76

The total number of visitors to the Academy's Steinhart Aquarium during 1932 was 910,052, which together with the Museum attendance for the same year makes a grand total of 1,291,611 persons who derived pleasure and instruction from the free exhibits maintained by the California Academy of Sciences.

A large number of gifts of museum, aquarium, and library material have been received during the year, detailed lists of which are on file in the Academy offices. The thanks of the Academy are here

extended to the generous donors for their interest in the welfare of the institution.

The Academy again makes grateful acknowledgment to Mr. Edward Hohfeld and Mr. Francis C. Hutchens for valuable legal services furnished gratuitously, as also to the Southern Pacific Company, to the Santa Fe Railway Company, and to the Matson Steamship Company for courtesies which have facilitated the work of the Academy, and which are sincerely appreciated by its officers and staff of scientists.

On behalf of the Council I am sure that I may say that the service rendered and the work done in the several departments has been satisfactory with noteworthy results giving promise of sustained future progress.

DEPARTMENT REPORTS FOR THE YEARS 1931 AND 1932

DEPARTMENT OF BOTANY

The herbarium of the California Academy of Sciences now numbers over 200,000 mounted sheets, thousands of specimens not yet mounted, and thousands of duplicates to be used for exchange. In 1931, 4446 specimens were received in exchange and in 1932, 2221. They came from the following institutions and individuals: Stanford University; University of California, University of California at Los Angeles; Arnold Arboretum and Gray Herbarium of Harvard University; University of Sweden; University of Montana; Missouri Botanical Garden; University of Pennsylvania; Field Museum; J. W. Thompson, Seattle; J. Ewan, Los Angeles; L. C. Wheeler, La Verne, California. In 1931, 951 specimens were sent as exchanges and in 1932, 4668. They were received by the following institutions and individuals: Pomona College, Gray Herbarium, Missouri Botanical Garden, Field Museum, Stanford University, University of California, University of California at Los Angeles, New York Botanical Garden, University of Sweden, University of Montreal, Arnold Arboretum, U. S. National Herbarium, University of Asiae Mediae, Royal Herbarium, Kew, England, Ralph Hoffman, and J. Ewan.

In 1931 the Academy purchased 1960 specimens, consisting of 50 mosses from Mr. A. Grout, 100 Patagonian plants from A. Donat, 297 west American plants from C. L. Hitchcock, 206 Californian from Mrs. E. C. Van Dyke, and 1329 west American plants from the estate of Dr. P. B. Kennedy. The numerous duplicates of the last which were distributed in 1932 are not included. In 1932 the Academy purchased 100 plants collected in Patagonia by A. Donat, 404 collected in Texas by J. A. Moore and J. A. Steyermark, and 60 collected by A. C. Brade in Brazil.

In 1931, 4120 specimens were received as gifts from 12 correspondents and in 1932, 6378 from 20 correspondents. This does not include the collection of Hepaticæ donated by Mrs. E. C. Sutliffe, consisting of 77 specimens received by her in exchange from Miss C. C. Haynes, nor a collection purchased by the Curator from F. Verdoon, Utrecht, Holland, consisting of 233 specimens, including 94 isotypes and costing $57.77. The Curator also paid for the binding of 35 volumes of Engler's Pflanzenreich at a cost of $57.75 and 100 specimens from A. Donat, Patagonian plants, the cost being $22.00.

The most notable gifts have been as follows: Miss Louise A. Boyd gave a collection of 109 specimens collected by herself and Mr. Robert H. Menzies on her 1932 expedition to eastern Greenland. Mr. George Haley of the University of San Francisco donated 108 specimens collected on a trip to Iceland. Mr. Eric Walther has added altogether 700 exotics from Californian gardens and parks. The greatest donation has been made by Mr. Lewis S. Rose, who has also helped in the herbarium

by arranging and distributing specimens. In 1931 he donated 2902 and in 1932 over 4000 specimens. He exchanges Californian species which he collects in sets with botanists throughout the world, Australia, New Zealand, Africa, Palestine, South America, Europe, and the western United States are among the countries represented in his exchanges.

The collections made in 1925 by H. L. Mason on the Revillagigedo Expedition of the Academy were incorporated in the herbarium in 1931. Over 140 specimens were added to the herbarium and the duplicates were distributed as exchanges.

In 1931, the curator at her own expense spent two weeks around Kingman, Arizona, collecting 704 numbers as well as duplicates. In 1932 she joined Mrs. Susan Delano McKelvey on a week's trip in the desert region of Southern California, collecting 200 specimens. During 1931 Mr. Howell collected about 2600 specimens. More than 1700 of this number were obtained on a trip through the western United States and Canada with Mr. and Mrs. Clarence Elliott of Stevenage, England. During the spring and fall, Mr. Howell made shorter trips to various places, notable being a trip with Mr. E. P. Van Duzee through the south coast ranges, with the late Ralph Hoffmann to Santa Cruz Island, and with Mr. Templeton Crocker to Guadalupe Island, Lower California. In 1932, Mr. Howell accompanied the Templeton Crocker Expedition of the California Academy of Sciences as botanist. About 2600 specimens of vascular plants were collected besides large collections of seaweeds and liverworts, with smaller collections of lichens, fungi, and mosses. The number of specimens among these nonvascular plants will not be known until specialists working on the different groups have completed their studies. After his return to the Academy in September, Mr. Howell made several local collecting trips on which more than a hundred specimens were obtained.

For the publication of new species, interesting notes on introductions to the flora, and other matters of general botanical interest, Mr. J. T. Howell and I started in 1931 "Leaflets of Western Botany," a small quarterly botanical publication. We hope to make it the leading botanical magazine of the west. At present the subscribers are not sufficient for its support. Mr. Howell and I assume all responsibility, financial and otherwise.

The California Botanical Club now numbers 68 members and has either a meeting in the herbarium or an excursion generally once a week.

The exhibition of native and cultivated flowers in the vestibule of the Museum is one of the most popular educational features of the Academy. My assistant, Mrs. George H. Phelps, besides doing all the mounting, much of the distributing and attending to the drying and pressing of fresh specimens that are continually being added, looks after this exhibition. Over 2000 species are exhibited in the course of a year, each labelled with both scientific and common name, the exotics having their native country given and the native species the locality. Mr. Eric Walther has been most faithful in collecting exotics for the exhibition.

Mrs. E. C. Sutliffe brought in wild flowers from Marin County every week in 1931. Besides she takes complete care of our collection of Hepaticæ which is continually increasing. Other members of the Botanical Club help to keep the flower show beautiful and interesting. Mrs. J. H. Morrison sent beautiful wild flowers for the show from Butte County in 1932.

ALICE EASTWOOD, *Curator.*

DEPARTMENT OF ENTOMOLOGY

The moving of the Department of Entomology from its old cramped quarters into the new commodious rooms in the East Wing dominated its activities throughout the year 1931.

The work of transferring this Department to the new rooms was done early in December, but at the end of the month much was still to be done before the collections and books were in shape so efficient work could be carried on. We are now located in excellent quarters, conveniently arranged for work. The entrance

is through the Department office, beyond which is a laboratory room 30x75 feet in size. This has been divided into three compartments or alcoves, the first of which is devoted to the order of Lepidoptera, the intermediate alcove has the Hemiptera on one side, and a store room for supplies on the other side, the third alcove contains the Hymenoptera, Diptera, Orthoptera and the Neuroptera. Beyond, at the eastern end, is a room 30 x 36 feet devoted to the Coleoptera. In these laboratories large tables have been placed between the rows of cases, and the lighting is all that could be desired. The entomological library has been divided so that books devoted to one order of insects are shelved in the alcove with those insects, periodicals and general works being placed in the middle alcove. The metal insect cases have been finished in dark green, so the rooms look neat and attractive as well as being very convenient for study. The Department of Entomology is now admirably housed and with a moderate allowance each year for additional cases the collection can be gotten into shape as rapidly as the limited personnel will allow.

Additions to the collections during 1931 number 9200 specimens, but to this number must be added between three and four thousand beetles taken by Dr. Van Dyke that will be numbered with his collection. Among the more important items in the list of additions to this Department are 1069 insects taken by Dr. O. H. Swezey about Lake Tahoe, and generously presented to the Academy by him; 962 Hawaiian insects presented by Dr. F. X. Williams; 787 insects other than beetles from Dr. E. C. Van Dyke, taken during field work in northern California; 664 Texan insects from Mr. Gorton Linsley, and 2435 taken by the Curator in several short field trips. Smaller but especially valuable lots were received from Dr. L. I. Hewes, Mr. G. Stuart Walley, Mr. C. M. Dammers, Dr. S. F. Light, The Museum of Comparative Zoology, and from the Templeton Crocker expedition to the Guadalupe Islands collected by J. T. Howell. The material from Dr. Hewes and the Museum of Comparative Zoology were types or co-types. Material purchased includes 800 Hungarian insects from Dr. Chas. Sajo and 962 Diptera from M. C. Van Duzee, including 196 types or allotypes. Mr. L. S. Slevin has continued to send us material from Carmel, adding many interesting species.

Use of this Department by students has shown a marked increase during the year. Aside from casual visitors 85 students have made use of our collections, most of them more than once, some many times. Dr. Van Dyke and Dr. Blaisdell have continued to devote one or more days each week to the study and arrangement of our material, and Mr. Martin has devoted his part-time work to the arrangement of the Coleoptera and to the rearrangement of our types and allotypes, that now number 3600. The publication of the Pan-Pacific Entomologist has been continued. Mr. E. R. Leach has kindly consented to act as Treasurer for this publication and has a desk in the Department's office. Through his efficient efforts all indebtedness of the journal has been cleared up. No. 1 of Vol. IX will appear as the January, 1933, number and in the future the volumes will run concurrently with the calendar year, a change that will greatly facilitate bibliographic work with the journal.

The year 1932 was the first for this Department in the new and larger quarters and much of the work of the staff for the first few months was the rearrangement of the material in certain badly over crowded groups and in getting settled in the new rooms. The time of the Curator that could be spared from the general care of the collection, for taxonomic work, was largely devoted to the Hemiptera and Lepidoptera, and considerable headway was made in determining and arranging material in these orders of insects. Preliminary arrangement of the Hemiptera was nearly completed and several families of the butterflies were put in order. In the Coleoptera Dr. F. E. Blaisdell continued to spend about two days a week in systematic work. During the early months of the year Mr. J. O. Martin worked on the arrangement of several families and Dr. E. C. Van Dyke completed his preliminary arrangement of the Elateridae and helped much in the arrangement of certain other families, and later Mr. Linsley Gressitt began work on our oriental Cerambycidae, or longhorn beetles. In the Hymenoptera Mr. H. S. Gentry has helped us in the determination of our fossorial families. Unfortunately there were

no cases available for the arrangement of the Diptera of which order the Academy now has a really fine collection of the North American forms.

Additions to the collections of the Department of Entomology during 1932 number 44,950 specimens. The largest and most important item was the Millard C. Van Duzee collection of about 30,000 specimens. This collection, obtained by purchase at a nominal figure, was largely Diptera, of which order there were 18,000 specimens including an unusually full series of such obscure forms as the Dolichopodidæ and Mycetophylidæ. The Hymenoptera, with 6,500 specimens, was a good second, the balance of the collection being Coleoptera. Most of this large collection was of determined eastern American species which well supplemented our own material and made the collection of special value to the Academy. Other important additions made during the year were the following:

From J. O. Martin 4,683 specimens of insects from Texas; from Mr. Templeton Crocker 2,417 insects taken on his Galapagos Island Expedition, and including probably the best series of Hemiptera as yet taken out of these islands; the Curator added 2,192 specimens in his field work. By bequest from Mr. W. W. Funge we received 1,170 insects from the Möjberg collection; Mr. A. J. Bassinger gave us 919 insects from Alaska; from Mr. Charles Sajo we purchased 765 determined European insects; Mrs. Mexia gave us 405 brazilian insects in addition to a larger number that came to us through the Van Dyke Collection, and from Mr. Otto Swezey we received 252 determined Hawaiian Delphacidae from the Giffard collection. Dr. Van Dyke and Mr. Louis Slevin have continued to collect assiduously for the Academy; Mr. C. M. Dammers has sent us many beautiful bred Lepidoptera of southern California and from Dr. John A. Comstock we have received others. Smaller lots have come in from other friends of the Academy that have added valuable species to the collection.

EDWARD P. VAN DUZEE, *Curator.*

DEPARTMENT OF EXHIBITS

The writer returned from Africa December 25, 1930, and commenced arrangements for the mounting of the collection of African animals donated to us by Mr. Leslie Simson. In February the auditorium was turned over to the Department to be used as a workshop and the work of adopting it to its purpose was commenced immediately. The staff of the department was added to until it numbered eight. For various reasons, mainly financial, this number has been reduced to four.

The energies of the Department have been expended almost entirely upon the construction of the exhibits for the Simson African Mammal Hall, and, in spite of adverse financial conditions, the work has proceeded well. Forty-seven large mammals have been mounted (14 of these under contract by Jonas Brothers of Yonkers, New York). The foreground construction for 10 large groups is being roughed in. The accessory department has made a great quantity of plants and other materials for the groups.

In addition, eight backgrounds are either completed or almost so. Four of these are by Captain Charles Bradford Hudson, two by Dr. C. E. Grunsky, two by Miss Grace M. Betts, and one by the writer.

We had hoped to be able to open the Hall to the public on April 4, 1933. Under existing conditions this will be impossible. However, it may yet be possible to open some time before the end of the year.

Mr. Leslie Simson has made several trips to Africa to secure material for the Hall and has practically completed the collection. To date we have received from him 220 specimens of large mammals.

Much of the writer's time was taken up attending to details connected with the construction of the new building, particularly the Hall, which is to contain the habitat groups of African mammals. This was done in cooperation with the other members of the building committee and Mr. Eugene L. Grunsky, Superintendent of Construction for the Academy. The results seem to have justified this course of action.

In addition much routine work has been accomplished, some of the items being the polishing and reinstallation of the large section of Sequoia giganteae, the making of a quantity of bird skins from the Templeton Crocker expedition and the mounting of a large Giant Black Marlin, which was presented to the Academy by Mr. Crocker. This specimen has been placed in the Steinhart Aquarium.

FRANK TOSE, *Chief of Exhibits.*

DEPARTMENT OF FISHES

The first part of the year was spent assisting Dr. Evermann in collecting data and references, and preparation of a manuscript on a Distributional List of the California Freshwater Fishes. This was later published as Fish Bulletin No. 35 of the State of California Division of Fish and Game.

In order to have a basis for the obtaining of a complete collection of California fishes, both freshwater and marine, and with a view of possibly preparing at some future time a complete handbook of the same, a card catalogue was prepared, consisting of a list of 474 names.

The question concerning the threatened extermination of certain species of whales, and the desirability of their conservation having arisen, at Dr. Evermann's request I spent considerable time looking up records and preparing tables showing facts and their relationship involved in the history of the Pacific whaling industry. The results of this work were later turned over to the U. S. Bureau of Fisheries for its use.

During the summer of 1931, when an assistant (James A. Campbell) was available, the bottles containing the Indiana Fish Collection were removed from the cartons in which they were shipped, as far as time permitted. The bottles were cleaned, placed on shelves in the basement of the Aquarium, alcohol was added where needed, and a card catalog prepared. At the beginning of the year 1932 the collection was shelved in its new quarters in the basement of the East Wing.

From August 26 to September 27, 1931, was spent afield and enroute to and from the region about Lake Maxinkuckee, Indiana, collecting fishes for the Aquarium and Museum. The month of September, 1931, was abnormally hot in Indiana, making the task of bringing the fishes back alive difficult, but it was accomplished with but few losses on the way. While at the Lake notes and comparisons were made regarding changes in the flora and fauna of the region since former visits. A number of turtles were captured and brought to the Aquarium, among them a peculiar hybrid of unusual interest. One species of fish in the lake, the straw-colored minnow, *Hybopsis blennius*, which ran in immense schools, was badly infected with furuncles, about 90 per cent being attacked. This disease had not been noted during the survey of the lake, but had become fairly common by 1927 or 1928. It seems to affect no other species.

From March 10 to September 1, 1932, was spent on the Templeton Crocker Expedition, collecting specimens of marine animals for the Museum. Much of the time since the return has been spent in preliminary work upon the fishes. While on the trip many life history notes of the species observed were made to be incorporated in the report. A great assemblage of many sorts of small creatures including fishes and crustacea, mollusks and worms, were collected about a submerged electric light. The task of sorting out these organisms is being undertaken by Mr. Kenneth Stanton, who is also of great assistance in arranging the collection of fishes. Up to date 3097 specimens have been tagged, and there is left only small collections obtained about the lights, most of them young fishes. Soon as this is finished identification of species will begin. The shell collection was sorted out and transferred to the Department of Paleontology.

As much time as can be spared has been devoted to the preparation of Biological Abstracts, and the editing of abstracts sent in, as well as the answering of queries that arise. To facilitate prompt answering of queries the list of genera kept on file is being kept up to date with proper notations added.

H. WALTON CLARK, *Curator.*

DEPARTMENT OF HERPETOLOGY

During the years 1931-32 progress has been made in building up the collection of the Department. The months of April and May and the first week of June, 1931, were spent in making a field trip to the Death Valley Region of California, an important locality from which the collection had no material whatever. This expedition resulted in the gathering of 577 specimens including some of our rarer Californian snakes, including specimens of the Panamint Rattlesnake, and added new records in distribution. An excellent representation of the reptile fauna of that very interesting region is now available for study.

As rattlesnakes have, of late, become of special interest to many students of herpetology an effort was made to build up the series of these snakes, and through purchase and exploration 90 specimens were secured. The collection of rattlesnakes now numbers over 480 specimens, and includes, with one exception, representatives of all of the species found within the borders of the United States, and also some of the species inhabiting Mexico and Central America.

The motion picture films, made in the spring of 1930, showing the various specimens of rattlesnakes found in the state of California have proved of great interest, and have been borrowed by the American Association for the Advancement of Science, for its meetings in Pasadena, and by the Northwest Scientific Association at Cheney, Washington.

Of the 1,387 specimens added to the collection during the past two years the outstanding accession is the carapace, bones and part of a skull of the extinct Charles Island Tortoise (*Testudo galapagoensis*), donated by the New York Zoological Society through Dr. C. H. Townsend, of the New York Aquarium. The acquisition of this specimen gives the Academy's collection of the giant land tortoises of the Galapagos Islands the one species which it lacked and makes it the largest and most complete in the world. Mr. L. M. Klauber, of the San Diego Zoological Society, donated a specimen of a Night Lizard (*Xantusia arizonæ*), a species recently described by him. Besides the Charles Island Tortoise a number of donations were received from the many friends of the Department; the principal ones being 148 specimens from Howard K. Gloyd collected in the middlewest and eastern states, and from the Museum of Comparative Zoology, Cambridge, Massachusetts, 32 specimens from Mexico and Central America. An excellent specimen of *Rana goliath*, the largest known frog, was received in exchange from that institution. Over one hundred photographs pertaining to the herpetology of the Galapagos Islands were received from the Templeton Crocker Expedition.

The routine work of the Department was carried on as usual, and 2,006 specimens from various accessions have been labeled, card catalogued and installed in the collection, besides 976 specimens which have been labeled only. A study of the reptiles and amphibians collected while on field work in Guatemala is in progress, and all of the reptiles, numbering 2,896 specimens, 630 of which are snakes, have been labeled. All of the snakes have been scale-counted and card catalogued. The growth of the collection of amphibians and of certain genera of lizards and snakes makes re-arrangement, and will call for much of the available shelf space.

As in the past the collections of the department have been made use of by students from our own and eastern states.

Owing to the many inquiries from the general public in regard to our snakes and lizards, and especially from the Boy Scouts who are endeavoring to obtain a merit badge for reptile study, a handbook of our west coast reptiles and amphibians has been prepared and presented for publication. The necessary information for a Scout to pass an examination for his merit badge, as well as general information for the casual observer is given, and the illustrations and line drawings will aid in the identification of the various reptiles and amphibians. For those who wish to consider the subject more deeply a bibliography is included which will give the reader all the literature necessary to become thoroughly acquainted with our reptile fauna.

JOSEPH R. SLEVIN, *Curator.*

DEPARTMENT OF LIBRARY

The accessions to the Academy Library in 1931 and 1932 are tabulated below, and represent a slightly smaller total than normal in certain respects, to be accounted for by the lessened funds available for purchases. The figures are as follows:

1931

	BD. VOLS.	UNBD. VOLS.	PARTS OF VOLS.	PAMPHLETS	MAPS
Exchange....	31	118	4295	28	278
Gift.....	46	56	2318	411	11
Purchase.....	245	132	1166	36	72
	322	306	7779	475	361

The number of exchanges added was 21. The titles catalogued were 407, only the shelf-list and temporary cards being made; these entries covered 507 volumes.

1932

	BD. VOLS.	UNBD. VOLS.	PARTS OF VOLS.	PAMPHLETS	MAPS
Exchange....	37	152	4080	94	219
Gift.....	167	223	2537	2754	27
Purchase.....	45	9	1086	3	29
	249	384	7703	2851	275

The number of exchanges added was 10. The titles catalogued were 1090, only the shelf-list and temporary cards being made; these entries covered 1449 volumes.

The work of the Library continues to be hampered by lack of sufficient personnel to take care even of the routine detail, so no progress was made on the most important task that should receive first attention—namely, the recataloguing of the collection. The congestion of material to be shelved was disposed of during a few weeks in the Spring of 1931 by the temporary assistance of Mrs. Barbara Cowles, and in the first six months of 1932 by the voluntary assistance of Edwin T. Coman, Jr., and by the temporary assistance of John L. Nicholson, Jr., for a few weeks in the Fall. This permitted the accumulation of accessions awaiting cataloguing to receive temporary catalogue entries and to be distributed to their shelf destinations.

Final cataloguing of new accessions will have to be postponed until the recataloguing as a whole can be undertaken.

The assistant librarian was privileged to attend the national meeting of the Special Libraries Association in Cleveland in June 1931. At the sessions of the Museum Group there the survey of art and science museum libraries in the country was discussed and the questionnaire prepared by the survey committee, of which he had served as a member during the preceding year, was adopted. He was then appointed chairman of this committee, the chief job of which during 1931-1932 was the collection of data for a published survey, compilation of which is now under way. Opportunity was taken during the trip to visit the museum libraries of Cleveland and Chicago, the John Crerar Library in Chicago, and that of the California Institute of Technology in Pasadena during the meeting of the American Association for the Advancement of Science the following week.

The Assistant Librarian wishes to express his appreciation to the Council for permitting him to continue on part-time duty the last three years in order to pursue graduate study in bibliography and the history of science at the University of California. Additional professional honors were accorded him during the two years, in addition to the chairmanship of the Museum Group survey committee; he was named on the ways-and-means committee of the national Special Libraries Association after the Cleveland meeting; he was elected vice-chairman of the Museum

Group in the Summer of 1932; he was appointed on the publications committee of the National Association in the Fall of 1932; he was asked to compile a manual on the organization and administration of local chapters and groups in the national Association in December 1932; and he was chairman of the Special Libraries Section of the California Library Association for 1931-1932. The library assistant, Miss Sexton, served as sub-editor on the bulletin of the Special Libraries Association of San Francisco, in charge of the review of current literature, for several months.

THOMAS COWLES, *Assistant Librarian.*

DEPARTMENT OF ORNITHOLOGY AND MAMMALOGY

Curatorial work of the usual routine nature continues to take a large share of our time, needed work upon the collection making heavy demands upon Curator and Assistant Curator. We have been obliged to discontinue one minor public service, the loan of specimens to the schools, partly from the increasing amount of time that it required, but largely because material set aside for this purpose had become so badly worn from rough handling that it could no longer be used. The general collection has reached a dangerous stage of congestion; in the present crowded condition of our rooms, specimens can no longer be stored so as to be readily available for study. In fact, the collections of small birds and mammals are no longer in a satisfactory condition even as regards safe keeping. Damage has ensued from crowding and further deterioration will be hard to avoid. Books, too, have suffered from the manner in which they must be kept. Our large mammal skins, however, are well cared for, as in the construction of the newly completed east wing of the Academy there was included a refrigerating room for storage of such specimens. This happily permitted the abandonment of the old hide room, which had always been an unsatisfactory make-shift. This part of the collection is now properly stored, both as regards safety and accessibility; some work remains to be done in arrangement. The decision of the authorities of the De Young Memorial Museum to discontinue all exhibits and other activities pertaining to the natural sciences, and to turn over all such material of theirs to the Academy resulted in this department receiving some hundreds of desirable specimens, many of great bulk. This accession, valuable as it is, still further accentuates our congested condition. In 1931 field work was carried on in the Atlin region, British Columbia, and in Panama. The Curator spent the time from June 23 to October 31 on the Atlin trip, following up field studies begun in previous years. The Assistant Curator returned in January from a three months' stay in Panama, and she was in the same country again, October 13, 1931 to February 5, 1932. In 1932 the Curator, as a member of the Templeton Crocker Expedition, spent the time from March 10 to July 10 on this trip to the Galapagos Islands. These expeditions have resulted in important additions of species and specimens to our collection. Mr. Mailliard, Curator Emeritus, has systematically continued the banding of birds at Woodacre, Marin County, California, but is principally engaged in rearranging and checking over the Mailliard collection of some 15,000 specimens of birds and 3500 sets of birds' eggs. On June 29, 1931, there was published "The Avifauna of the Galapagos Islands" based upon the Academy collection, preparation of which had occupied much of the Curator's time during the previous four years. This is mentioned here because since the appearance of this study we have received from many sources requests for the exchange of Galapagos birds, on the assumption that we would no longer need to keep our large series, all of which requests have been refused. The Curator wishes to place on record his strong conviction that this entire large collection should be kept intact; that it would be a grave mistake to part with any of it. As a unit it forms an important feature of our institution, and it is certain to increase in importance and usefulness in future years. The 49th Stated Meeting of the American Ornithologists' Union, held in Detroit, October 19-22, 1931, was attended by Mrs. Davidson. This she did while en route to the Atlantic port from which she sailed to Panama, taking advantage at the same time of the opportunity to pursue bird studies in several of the large eastern Museums. The Sixth Annual Meeting of the Cooper Ornithological

Club, held in Berkeley, May 15 and 16, 1931, was attended by all members of the department, as well as by others of the Academy. The 50th Stated Meeting of the American Ornithologists' Union, held at Quebec, October 18-21, 1932, was attended by the Curator, who presented a paper entitled "The Galapagos Avifauna Today."

Details of accessions for 1931: Birds. *Gift:* Templeton Crocker, 2; C. W. Edge, 37; E. W. Gifford, 5; Golden Gate Park Aviary, 1; Louis Hartmenn, 20; Forest Ranger J. B. Herschel, 1; W. J. Jackson, 1; J. Mailliard, 14; Carrol McGettigan, 2; James Moffitt, 1; Mori Bird Company, 1; A. W. Robison, 1; Gene M. Simpson, 5; J. W. Steinbeck, 3; Steinhart Aquarium, 2; Mr. Sutro, 2; L. R. Wolfe, 5. *Permanent Loan:* Memorial Museum, 344. *Expedition:* M. E. Davidson, 433; H. S. Swarth, 217. *Transfer:* Department of Exhibits, California Academy of Sciences, 8. *Purchase:* 7. Bird skulls and skeletons. *Permanent Loan:* Memorial Museum, 707.

Eggs. *Gift:* G. Dallas Hanna, 1 set; O. J. Millard, 1 set and nest. *Expedition:* H. S. Swarth, 1 set.

Mammals. *Gift:* G. Dallas Hanna and C. C. Church, 8; Joseph Mailliard, 1; Milton S. Ray, 1; U. S. and California Quarantine Service, 2. *Expedition:* M. E. Davidson, 7; H. S. Swarth, 217. *Transfer:* Department of Exhibits, California Academy of Sciences, 3. *Purchase:* 6.

Mammal skulls and skeletons. *Permanent loan:* Memorial Museum, 157.

Details of accessions for 1932: Birds. *Gift:* Mr. Ward Austin, 1; Mr. F. E. Booth, 7; Miss Louise A. Boyd, 14; Mr. J. A. Brock, 1; The Templeton Crocker Scientific Expedition, 1932, 483; Forest Ranger Herschel, 1; Mr. E. C. Jacot, 1; Mr. C. E. Kruger, 3; Mr. J. D. Lewis, 1; Mr. M. E. Lombardi, 2; Mr. John W. Mailliard, Jr., 1; Mr. Joseph Mailliard, 14; Mr. John McLaren, 1; Mr. J. V. Patton, 1; Mr. Warren Phillips, 1; Mr. Milton S. Ray, 5; Mr. A. W. Robison, 19; Mr. J. W. Steinbeck, 4; Dr. J. M. Stowell, 2; Mr. Henry Trost, 1. *Exchange:* Steinhart Aquarium, 1. *Purchase:* Mr. H. G. Deignan, 35; Mr. James Moffitt, 2; Mr. W. F. H. Rosenberg, 1; Mr. H. S. Swarth, 2. *Expedition:* Mrs. M. E. Davidson, 321.

Eggs. *Gift:* The Templeton Crocker Scientific Expedition, 1932, 6 sets; Dr. George Haley, 1.

Mammals. *Gift:* Mr. Wallace Adams, 52; The Templeton Crocker Scientific Expedition, 1932, 6; Mr. Spencer Grant, 1; Mr. Hole, 1; Mr. Adolf Holm, 1; Mr. H. E. Jager, 1; Ranger McBeen, 1; Mr. J. S. Rowley, 96.

H. S. SWARTH, *Curator.*

DEPARTMENT OF PALEONTOLOGY

Two large collections were secured during the biennium 1931-1932. The first was the result of the G. Allan Hancock Expedition to the Galapagos Islands, Panama, and other west coast points. Dr. L. G. Hertlein accompanied this expedition as a representative of the Academy, and he succeeded in securing a large number of marine mollusca by dredging and shore collecting. These help greatly in rounding out the Department's west coast collection because localities were visited which have long been classical in conchological literature. Dr. Hertlein also secured some land shells and fossils at various stopping places.

The other large accession was the material collected by the Templeton Crocker Expedition of 1932. Due to the interest and enthusiasm of Mr. Crocker and the assistance of all members of the party the Department of Paleontology fared exceedingly well. A great deal of dredging was done, which brought up a rich store of valuable material from many places along the west coast, south as far as the Galapagos Islands. Land shells were also collected at numerous places.

As a result of these two expeditions the Department's collection of mollusca, living and fossil, from the west coast of Mexico and Central America has become one of the most complete in existence.

Dr. F. M. Anderson has continued with his collections and studies of the Cretaceous of California.

Numerous valuable additions to the collection of microscopical fossil material, particularly diatoms and foraminifera, were made during the biennium through the efforts of Mr. C. C. Church and other members of the geological department of the Associated Oil Company.

Mr. M. Vonsen made excursions into the desert region of California and succeeded in securing some additional, excellent specimens of rare minerals. He gave special attention to investigations in and about Death Valley.

Much of the energy of the staff has been utilized in the arrangement of the collections in systematic and orderly manner, a work which is of equal importance to the acquiring of new material. The incorporation of the D. D. Baldwin collection into the regular series was completed largely through the efforts of Mrs. Winifred B. Morrison.

A rearrangement of the land and fresh water mollusca (over 80,000 specimens) has been completed by Mr. J. L. Nicholson. The work extended through several years and involved the making of card indexes of all species and genera, and the shifting of collections into systematic order. During the summer of 1932 Mr. Nicholson was employed to make plaster casts of type specimens in other institutions, and over 600 of these were added to the collection.

The assignment of the space formerly occupied by the Department of Entomology to the Department of Paleontology for research purposes has greatly relieved the congestion which has been so detrimental for several years.

The Academy's collection of diatoms, and its exceptional library upon the subject have attracted the interest of institutions and individuals throughout this and many foreign countries. It is fitting that such a center should be located in California because these minute microscopic plants have become to be of very great economic value, and the deposits of the state are far larger than those of all the remainder of the world. The quarries of the state supply the most of the demand. It has been said that diatoms are the most valuable single group of fossils in existence, and that they are probably the source of most of the petroleum in California. They are used in cement; for insulation wherever a highly efficient non-conductor of heat is needed; in filtration; and as an abrasive in hundreds of kinds of polishes and other substances. The quantity of California Diatoms used in filtration alone has been estimated at 50,000 tons annually in recent years. The value of fossil diatoms in determining the geological age of sedimentary strata is now well established, and this application has been worked out very largely at the Academy during the last few years.

G. DALLAS HANNA, *Curator.*

DEPARTMENT OF STEINHART AQUARIUM

The Annual Reports of the Steinhart Aquarium of the California Academy of Sciences for the years 1931 and 1932 are here presented in consolidated form. That part relating to 1931 was filed by Mr. Robert J. Lanier, Assistant Superintendent, in the absence of Superintendent Alvin Seale, at the time with the scientific expedition of Captain G. Allan Hancock's motor cruiser *Velero III* to the Galapagos Islands. Items relative to 1932 were prepared by Superintendent Seale.

The exhibits of the Steinhart Aquarium have constantly increased to such an extent that we have reached our limits for proper display, and the need for more space and large tanks has become more and more evident. Of fresh water tropical fishes we now have 4,432 specimens of 59 species in our balanced aquarium room and in the greenhouse, and no more increase is possible without over-crowding. The capacity of the aquaria used for breeding purposes in the greenhouse is also exhausted, so we are forced to curtail this interesting phase of our work. It is hoped that it may be possible to increase these facilities in the near future through favorable action of the San Francisco Board of Supervisors.

Owing to economic conditions, our budget received a severe cut for 1932, which made it imperative to reduce expenditures. The Council and Board of Trustees

regretfully ordered a reduction of three members of the aquarium staff and the disposal of all our seals and sea lions. This has caused much adverse comment from the thousands of people who visit the Aquarium.

On the other hand, the Aquarium has been fortunate in its friends who have presented 3,072 gifts during 1932.

The total number of specimens in the Steinhart Aquarium of the California Academy of Sciences at the end of 1932 was 13,185, and the number of separate species represented was 469. A gratifying decrease in mortality has been shown during the two years.

The attendance for 1931 was 1,003,753 visitors; that for 1932, 910,052, the grand total of all visitors since the Aquarium was opened being 9,259,424, testifying to the great popular interest and educational value of the exhibits.

On December 9, 1931, Captain G. Allan Hancock of Los Angeles, very kindly invited the Academy to send two men to accompany a scientific expedition on his yacht *Velero III* to Central America and the Galapagos Islands. Dr. Leo Hertlein, of the Department of Paleontology, and the Superintendent of the Aquarium, were selected. After three months in the field this expedition returned with a large amount of material, including more than a thousand specimens of fishes and some valuable fossils. One unique find was a new species of fresh water fish from Chatham Island, of the Galapagos. A small number of fishes from these islands were brought alive to the Aquarium, thus proving they could be carried this great distance if proper equipment is provided.

On March 10, 1932, Mr. Templeton Crocker of San Francisco, a patron of the Academy, organized and carried out a scientific expedition covering much of the same territory as the above. This expedition was participated in by the Assistant Superintendent of the Aquarium, Mr. Robert Lanier, and three members of the Academy staff. After six months of active work and exploration they returned with a vast amount of material, including 331 specimens of live fish representing 56 species. These are now in the Aquarium tanks.

The Matson Navigation Company has been most helpful and generous to the Aquarium during the past year. Two large plate glass tanks with cast bronze frames have been loaned to this institution for an indefinite period. This company has also given permission for us to install a circulating system on their steamship, *Mariposa*, and will continue to bring us live fishes from Fiji and Australia, serving the Aquarium without charge, because we, as a free institution, contribute to the interest and education of the travelling public they serve.

A noteworthy improvement was completed near the close of 1931, the installation of pressure filters for the water of the out-door seal pools, thus rendering them so clear that the movements of the animals may be readily followed while swimming beneath the surface. All the salt water of the aquaria is now filtered into the salt water reservoirs below ground. All waste water lines from the building and the seal pools are now directly connected with the new sewer, thus obviating the previous necessity and expense of pumping.

Complete lists of gifts to the Aquarium, exchanges, and statistics concerning the fishes and other animals exhibited, mortality tables, etc., will be found in the accompanying detailed report.

ALVIN SEALE, *Superintendent*,
ROBERT J. LANIER, *Assistant Superintendent*.

FINANCIAL STATEMENTS

REPORT OF THE TREASURER

For the fiscal year ending December 31, 1932

January 1, 1932 Balance due Crocker First National Bank		$ 11,043.03
Receipts:		
Dues	$ 3,105.00	
Rentals	85,946.04	
Notes Payable	78,500.00	
Notes Receivable	2,000.00	
Notes Receivable Ignatz Steinhart Trust	1,000.00	
Lecture Endowment	10,000.00	
Templeton Crocker Endowment	1,000.00	
Barton Warren Evermann Endowment	1,000.00	
Lecture Fund Income	500.00	
Publication	336.67	
Post Card Sales	348.93	
Ignatz Steinhart Trust Interest	170.53	
Interest	163.12	
Park Birds Handbook Fund	59.00	
W. G. Wright Fund	15.00	
Total Receipts		$184,144.29
		$173,101.26
Expenditures:		
East Wing Construction	$ 59,664.96	
West Wing Additions	1,593.23	
Interest	20,391.83	
Investment of Lecture Endowment Fund	10,012.50	
Notes Payable	6,000.00	
Earthquake Insurance Sinking Fund	1,200.00	
Museum Department Appropriations	24,149.74	
Salary Expense General	19,462.50	
Department Salaries	22,900.00	
Insurance	2,026.86	
Sundry Creditors	2,831.17	
Library	1,265.56	
Steinhart Aquarium Equipment	978.62	
Contingent Fund	754.04	
Publication	341.92	
Lecture Expense	316.20	
Expense	4,330.04	
Post Cards	3.97	
Total Expenditures		$178,223.14
December 31, 1932 Balance due Crocker First National Bank		$ 5,121.88

F. W. BRADLEY, *Treasurer.*

Examined and found correct,

McLAREN, GOODE & CO., *Certified Public Accountants.*
San Francisco, California, February 11, 1933.

INCOME AND OPERATING EXPENSES

For the fiscal year, January 1, 1932 to December 31, 1932

Income:		
Charles Crocker Scientific Fund Endowment Income	$ 1,788.80	
James Lick Endowment Income	72,026.30	
General Income	14,297.64	
Dues	3,200.00	
Interest Received	328.40	
Profit on Post Card Sales	197.53	
Total Income		$ 91,838.67
Expenditures:		
General Expenses	$ 4,151.57	
Salaries	44,467.61	
Interest	21,732.81	
Insurance	2,488.08	
Total Expenditures		$ 72,840.07
Net Income Transferred to Surplus Account		$ 18,998.60

SUMMARY OF SURPLUS ACCOUNT

December 31, 1932

Balance January 1, 1932		$620,523.24
Additions:		
Net Income for the year ended December 31, 1932	$ 18,998.60	
Transfer of B. W. Evermann Donation to be expended for exhibits	1,000.00	
Total Additions to Surplus		$ 19,998.60
		$640,521.84
Deductions:		
Depreciation	$ 22,122.38	
Transfer to Earthquake Insurance Sinking Fund	1,200.00	
Total Deductions from Surplus		$ 23,322.38
Surplus, December 31, 1932		$617,199.46

BALANCE SHEET

December 31, 1932

Assets

Property:

Real Estate 831-833 Market Street—pledged		$600,000.00
Commercial Building, 833 Market Street—pledged	$516,818.66	
Less: Reserve for Depreciation	131,788.71	385,029.95
Real Estate, Jessie Street		8,083.65
		$993,113.60

Museum, Golden Gate Park:

West Wing	$193,619.15	
Less: Reserve for Depreciation	48,991.75	
		$144,627.40
East Wing	$252,184.72	
Less: Reserve for Depreciation	5,025.06	247,159.66
General Collections		261,127.41
Library and Equipment		172,080.28
Tools and Equipment	$ 52,325.44	
Less: Reserve for Depreciation	14,019.63	
		38,305.81
Office Furniture	6,600.64	
Less: Reserve for Depreciation	4,584.59	2,016.05
		865,316.61
Investment Securities		20,226.21

Ignatz Steinhart Trust:

Notes Receivable	$ 4,000.00	
Steinhart Aquarium Construction	263,390.29	
Steinhart Aquarium Equipment	36,647.02	
Steinhart Aquarium Revolving Fund	5,000.00	
Uninvested Cash on Hand	290.04	
		309,327.35

Current Assets:

Rent Receivable	$ 2,166.70	
Post Cards in Stock	1,529.80	
Cash on Hand	143.60	
Advance to employee doing field work	100.00	
		3,940.10
Total		$2,191,923.87

BALANCE SHEET—Continued

Liabilities

Endowments:

James Lick Endowment	$804,902,31	
Charles Crocker Scientific Fund Endowment	20,000.00	
John W. Hendrie Endowment	32,770.85	
		$857,673.16

Funds Held for Special Purposes:

Alvord Bequest Botanical	$ 5,000.00	
John W. Hendrie Endowment Income	1,345.08	
Earthquake Insurance Sinking Fund	10,126.21	
Templeton Crocker Publication Fund	1,000.00	
Lecture Fund	10,000.00	
Lecture Fund Income	188.06	
Park Birds Handbook Fund	355.60	
W. G. Wright Fund	69.57	
Wild Life Protection Fund	16.10	
		28,100.62

Ignatz Steinhart Trust:

Principal	$250,000.00	
Interest	59,327.35	
		309,327.35

Notes and Accounts Payable:

Mortgage note and other notes payable	$373,500.00	
Accounts Payable	711.36	
Due Crocker First National Bank	5,411.92	
		379,623.28

Surplus	617,199.46
Total	$2,191,923.87

SUSIE M. PEERS, *Secretary*
Board of Trustees.

We have examined the foregoing Balance Sheet, together with the books and accounts of the California Academy of Sciences, and in our opinion, it is properly drawn up so as to exhibit a true and correct view of the Academy's affairs, as shown by the books.

MCLAREN, GOODE & CO.
Certified Public Accountants

San Francisco, Calif.,
February 11, 1933